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THE investigation into the charges against the Supervising Architect of the Treasury Department has some amusing features, although no witnesses have as yet been brought to support the accusations. On the contrary, the two principal complainants keep carefully aloof from the committee-room, but pour their griefs into the ears of sympathizing reporters, who promptly publish them to the world. This mode of collecting evidence from two persons separately on the same subject has been the means of throwing an unexpected light upon some of the specifications of the charges which were not quite clear. The last item in the deposition of the former Supervising Architect, for instance, recites that the present incumbent had been guilty of cancelling the system of percentage on contracts for granite-cutting, and substituting therefor specific contracts at fraudulent rates. Most of our readers probably recollect the evidence given some years ago in relation to certain percentages on freestone contracts of the same kind, from which it appeared that the lucky contractor, in order to make his income last the longer, was in the habit of allowing his men to play ball and amuse themselves in various ways, charging the time thus spent to the public account, and collecting fifteen per cent of the amount for his own benefit; and may be surprised that the abrupt termination of such contracts by the present Government Architect, on his accession, should be attributed to him as a crime; but the Cincinnati contracts related to freestone only, and it might have been possible that those for granite were carried out with a scrupulous economy which rendered any change really detrimental to the public interest. Unfortunately, on this point, the testimony of the other principal accuser shows that under the percentage system, at least one granite contractor, not content, like his Ohio brother, to charge the Government a round commission on the time spent by his men in field sports, was ingenious enough to hire a hundred or more apprentice stone-cutters at a dollar a day, charging them to the Government at three dollars and twelve cents each per day, and pocketing the difference, with forty-seven cents each per day additional, as his percentage on the cost of the labor. If the cancelling of such contracts as this is an error in a public officer, it is to be wished that we might have some more criminals of the same kind in stations of responsibility.

THE matter of the bequest of the late Levi Hale Willard, for the purpose of founding an Architectural Museum in New York, has been taken up with zeal by the architects of that city, and a commission has already been chosen by the New York Chapter of the American Institute of Architects to aid in carrying out the intention of the generous donor. Of course, some time must elapse before the gift is entirely available, and an understanding between the commission of architects and the Trustees of the Metropolitan Museum of Art, which is the conditional legatee, is essential to the taking even of the first step, but there is no doubt of the goodwill of both bodies, and nothing will need to be arranged but the details of the scheme. Unfortunately, one of the first details to be arranged is the very important one of finding room to place the collection, or any part of it, when it is got together. The available space in the present building of the Metropolitan Museum is more than filled by other works of art, while many objects already purchased remain in their cases in the cellar, for want of room to display them. Under these circumstances, the question of accommodation for a new collection of such bulky articles as an architectural exhibit would naturally comprise is a serious one, and it is very likely that an appeal to the public for funds to erect an additional building will be necessary before Mr. Willard's bequest can be accepted.

WE owe an apology to two of our contemporaries for having allowed some weeks to elapse before saying what we might to welcome them to the field of technical literature. The *Builder*, published monthly by Clark W. Bryan & Company, at Holyoke, Mass, and edited by Mr. E. C. Gardner of Springfield, shows all the taste and knowledge of architectural matters which Mr. Gardner's books have displayed, set forth in the pleasant and suggestive style which most of our readers know so well. We should hardly wish, understanding, as we do, the difficulties of the undertaking, to criticise minutely the early numbers of a technical journal, even if we found anything to object to, but in the present instance our malice, if we had any, would be disarmed by the intelligent, well-bred and, at the same time, business-like character which pervades all portions of the paper, and will, we may be sure, continue to distinguish it as long as Mr. Gardner conducts it. The other new-comer is the *Inland Architect and Builder*, published monthly in Chicago by the Inland Publishing Company, and containing primarily such information in regard to local building matters as may be most acceptable to the profession in that busy place. It is surprising to see how much matter of this kind there is, and it is pleasant also to observe the skill and care with which it is sifted and arranged. The editorial paragraphs in the two numbers which have so far appeared seem to us of unusual value and interest, and we take pleasure in congratulating the profession in the West upon the high character of the journal which promises to represent it.

THE City Council of Milwaukee, Wisconsin, has appropriated a sum of money for procuring model school-house plans for buildings of four, eight, and fourteen rooms, which are, after careful selection, to be adopted as standards, according to which all future school-houses in the city are to be built. We have not learned the particulars of the scheme, but it certainly shows a praiseworthy desire on the part of the government to secure the benefit of modern architectural science for all the children under its care, instead of a small number of high school scholars, who generally, in our towns, enjoy a monopoly of such professional skill as the municipality calls to its assistance. There is, undoubtedly, a good deal of danger that plans suited for a given site, with a certain orientation, may not be so well adapted for a different location and distribution of sunshine; and the most satisfactory way would be to have the best possible plan drawn independently for such building; but this might be impracticable, and we can at least be sure that a good plan for such a structure will give, however turned around or misplaced, a result infinitely superior to the ordinary creations of unskilful school-committees and cheap architects or builders. We hardly comprehend, in this country, how far we are behind all other civilized nations in the matter of school-house architecture. While our school-house furniture is universally acknowledged to be the best, the lightest, and the most scientifically and ingeniously adapted to promote the comfort and health of children of any in the world, the buildings in which we usually place it would not be tolerated for a day in any school district in England, France, or Germany. This is partly owing, no doubt, to the feeble hold which architecture, as a science, has yet secured upon our every-day life, and partly, perhaps, to the peculiar methods of carrying out public works which the necessities of our politics are apt to impose upon those who administer such affairs; but there are signs, particularly in the innovating and energetic West, of a new and keen interest in the welfare of the younger portion of the community, and we may hope that this will ultimately lead, in other places than Milwaukee, to the radical amelioration of the places where children spend most of their waking hours, during

the most susceptible period of their physical and moral lives, and in which they receive their strongest and most lasting impressions.

MR. ADAM F. BANDELIER, the brave and learned agent of the Archæological Institute of America, after a short rest, which was found necessary in order to enable him to recover from a serious affection of the skin of the face, brought on by freezing during one of his journeys in the Indian country, set out a short time ago, under the direction of the Institute, to visit the wild and little-known tribes of northern Mexico, among whom he hoped to find traditions and modes of life less modified by foreign influence, and approaching more nearly to those of primitive times, than exist at present anywhere else on the continent. After a short stay with Mr. Cushing, at Zuñi, which happened to lie in his way, he departed a few weeks ago, apparently not without misgivings, for the wilderness of Sonora, where, after experiences which we can only imagine, he was taken prisoner by Indians of a tribe which has recently risen against the Mexican government, and carried away into the mountains. The first accounts of his capture which were received left hardly any doubt that he, with one white companion and one friendly Indian, were subsequently murdered by the savages, with the tortures which Indians delight so much to witness, but a more recent dispatch brings the gratifying intelligence of his escape and safe arrival at a military post of the United States. What may have been the details of his journey we cannot even surmise, but every one must rejoice at his escape from the hands of the barbarians.

A QUESTION was propounded not long ago to the editor of *La Semaine des Constructeurs*, of a kind which is not uncommon in France, where the custom of decorating rooms with mirrors is much more general than with us. It seems that a certain individual bought a house containing eight fireplaces, with mantels, each of which was surmounted by a large mirror attached to the wall. Four of the mirrors were secured, as is customary there, to frames of wood-work forming a part of the furring, so as to bring the surface of the glass in the same plane with the plastering, a moulded frame only being placed around them, and projecting from the wall. The other four were attached to the plastering. On taking possession of his house he discovered that the mirrors had all been removed, and laid claim to them, but was answered that they were merely furniture, and as such had not been sold with the building. Nothing had been said about the mirrors in the contract for the sale of the house, and the purchaser, therefore, sought the advice of the editor concerning his rights. The response to his inquiry informs him that according to the *Code Civil*, the mirrors of an apartment constitute a part of the building, when the frame-work on which they are fixed forms an integral part of the wood-work of the room; pictures "built in," as we say, being regarded in the same light. With regard to mirrors placed against the wall the law is not so clear, but the decisions of the higher courts indicate that any objects of the kind which form a part of the scheme of decoration of the room are to be held as belonging to the building, even though they may be simply placed against the plaster. In the case in question, the fact that the paper on the walls was interrupted at the frame of the mirrors, instead of passing behind them, showed that they were not intended as movable ornaments, but as a part of the permanent decoration, and as such the new owner could justly reclaim them.

THE bill to incorporate the Meigs Elevated Railroad Company, after passing the lower house of the Massachusetts Legislature by a majority of nearly two to one, was rejected in the State Senate, which a year ago passed the same, or a very similar bill, by a considerable majority. Several reasons are mentioned for this refusal of the fifth request for incorporation made in that State by elevated railway companies, but there can be little doubt that the influence of the existing railway corporations had much to do with the defeat of the bill, after the two houses separately had at different times pronounced themselves in favor of it. It is obvious enough that, granting the practical success of Captain Meigs's invention, the creation of a company authorized to build railroads costing for construction and land damages less than one-third as much as those now existing would be a serious matter for the present corporations, and it is not strange that personal arguments of the strongest kind should have been brought to bear upon such members of the Legislature as might be amenable to the resentment of those powerful bodies. Independent of the effect of the rejection of the bill in preventing any attempt to establish railroads on the Meigs system for public use, it appears that under the general railroad law of Massachusetts the inventor is, until some sort of act is passed for his relief, prohibited even from constructing an experimental line on his own, or any other person's land within the State. The statute expressly says that all railroads built in Massachusetts shall be of the standard gauge, and as a single-rail track is certainly not of the standard gauge, it would, as it seems, be a misdemeanor to build anything of the kind. Whether Captain Meigs and his friends will persevere in their attempts to gain a foothold in their own State, or carry their models and money to some more hospitable community, is apparently not yet decided.

THE various telegraph, telephone and electric-light companies in New York have done a sensible thing in holding a conference, at which representatives of all the companies interested were present, by invitation, to consider the best method of placing and maintaining underground wires for the common benefit of all. It is evident that if electric wires are to be placed below the surface, it will be much more economical to adopt a mode by which a conduit large enough for the lines of all the companies can be laid at the common expense, than to employ independent conduits, while the wires will be more easily cared for under a comprehensive system, so that the best efforts of the associated companies are likely to be put forth to attain this object. No plan at present in use seems to have met with the approval of the delegates to the meeting, but a committee was appointed, with power to consider the subject, and adopt such measures as it might deem advisable in furtherance of the common object. In Chicago, where, it will be remembered, an ordinance was passed some time ago requiring all corporations using electric wires to remove them from the streets on or before May 1, the telegraph companies have prepared for resistance, and threaten, in case their wires are forcibly removed, as has been proposed, to close all their offices in the city, and leave the city without telegraphic communication. There is a good deal in this threat, and the result will probably be that the wires will remain where they are, at least for the present.

A NEW material for brick-making has been employed recently, in the shape of cork-dust, which is collected at the manufactories where that material is worked into shape, mixed with mortar of lime and clay, and moulded in the usual manner. On drying, these cork bricks are found to possess a resistance of nearly fifty pounds to the square inch, and are readily put together with lime or cement into the ordinary forms of masonry. As might be supposed, they are very light, weighing about one-third as much as an equal bulk of water, and are very slow conductors of heat and moisture. These properties give them a special value in the construction of partitions which need to be very light, as well as sound-proof and strong; while their imperviousness to heat and moisture makes them an excellent material for furring damp walls, and for lining ice-chests and beer-cellars. It seems probable that a similar concrete might be made here with saw-dust, and if it could be furnished cheaply, it would probably soon find an extensive application for deafening floors and partitions, casing water-pipes, and furring brick walls. For the latter purpose it might, we should imagine, be nearly as fire-resisting as the cement or plaster blocks now employed for the purpose in fire-proof buildings, and would, of course, be much less costly.

ACCORDING to the *Builder*, the recent dynamite explosion at Westminster had some singular results; in many cases the most fragile objects in the rooms of the adjoining buildings being unharmed, while massive pieces of furniture close by were torn to pieces. In a bed-room in the Local Government Board Office, close to the spot where the dynamite was placed, a heavy clothes-press was blown into small splinters, while a toilet bottle and glass on the mantel were uninjured. The glass face of a clock, also on the mantel, was torn off, and a picture hanging near vanished completely away, but a companion picture hung beside it was found quite undisturbed. Whether this difference in the effect of the explosion upon various articles is due to the character of the currents of air which reach them seems to be quite uncertain, but the subject is worthy of farther investigation.

BUILDERS' SCAFFOLDING. — XI.

FRENCH. — HOTEL DE VILLE, ETC.

THE scaffolding for the reconstruction of the Hôtel de Ville, Paris, which was destroyed by the Paris Commune, in May, 1871, ordered to be rebuilt in 1873, and is expected to be completed in July next, is the largest (with the exception of that for the Exhibition Building of 1878) and the most complete that has been erected in Paris for some time. It formed a quadrangle around the exterior of the building of 497 feet by 427 feet, affording a continuous working-platform all around the exterior of the entire building, at any one level of over 600 yards lineal. This is independent of the scaffolding all around the interior quadrangle inclosed by the building itself and erected at the same time. The height of the scaffold at the angle towers is 120 feet, and at the other portions of the building the height is 90 feet. It was designed with great care by the architects, as is required by the building regulations in France. The French architect is also required to design all staging, centres, and false-works required for turning or building vaultings, arches, etc. We have reproduced a photograph [*see Illustrations*] giving a panoramic view of this forest of scaffold poles, as it gives a good idea of the magnitude of this skeleton structure.

To sustain a structure of necessarily temporary character under the imposed conditions, a considerable portion of it being 120 feet high, which during the earlier stages of the building is fully exposed unshielded to the fury of the winds, involves considerable experience in the erection, so as to economize labor and expense in handling heavy spars at this height without extraordinary appliances and auxiliary false-works, and also avoid danger to life or limb during the progress of the operations. The photograph here reproduced was taken from the roof of an adjacent buildtng when the walls had reached a considerable height. In some parts the second floor is shown — as in the left-hand lower corner. It is laid in perforated-brick arches on iron joists. The plan of the main walls of the building is well depicted in the midst of the surrounding maze of scaffolding.

A peculiarity of scaffolding in France and in England is its erection complete in advance of the prospective building, and the great importance with which the French State authorities properly regard scaffolding, and indeed all regulations which appertain to building construction. The standards consist of long spars, nine inches to twelve and even up to fourteen inches in diameter at their butts; the heavier spars being put lowermost, the upper lengths gradually decreasing in diameter. The successive lengths are spliced together with an oblique *halving* joint, with a tongue and groove at the upper and lower butting surfaces of each joint, and bolted together as shown in Figure 24.

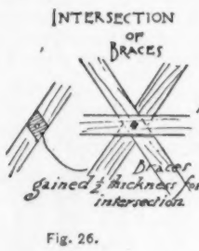


Fig. 26.

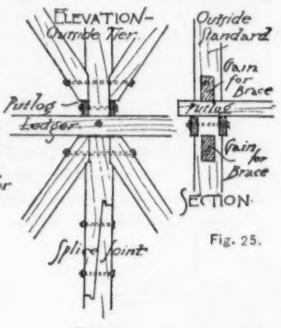


Fig. 24.

Fig. 25.

They are set up at regular intervals, upon sleepers into which they are gained. The inner tier is set some distance from the main wall, to admit of running a continuous gangway or platform between, all around the building, at any required interval up the height of the wall as it progresses. The putlogs project inside the standards towards the wall, so as to support this gangway. The outside tier is set apart from the inner tier, say, twelve to sixteen feet, each standard of the one tier being set perpendicularly opposite to the corresponding standard of the other tier. The horizontal timbers or ledgers consist of a pair of scantlings abreast on both sides (front and and back) of the standards, and gained-in and bolted to them, as shown in Figure 25, above are the putlogs. The scantlings are, say, four to six inches by eight to ten inches. The outside tier of standards is braced longitudinally in that portion lying between the pavilions and the central façade, in alternate diagonals, and reaching to the third ledger above; *i. e.*, they extend upwards over three successive horizontal intervals between ledgers. The portions opposite the centre and the pavilions have double diagonal or cross-bracing, some of the tiers of this bracing intersecting at a ledger, all being gained-in between the ledgers, where they intersect them, and all firmly bolted together, as shown in Figure 26. The feet and heads of the braces are gained into the standards at a ledger, and all bolted together, as shown in the figure, in which the ends of the putlogs are shown in position.

Figure 25 is a cross-section of Figure 24. All the outside longitudinal bracing-panels correspond in height in both the single and double bracings. The brace spars are lighter than the standards. Raking transverse shores, reaching to about one-third of the height of the standards, are gained and bolted to the outside tier, the feet of the shores being properly secured against sole-pieces. The lower tiers of putlogs, which consist of pairs of scantlings abreast, of about three inches by six or eight inches, are gained and bolted to both the inside and outside tiers of standards, and also to the raking shores. They project beyond the inside tier of standards towards the wall, for the purpose of supporting the platform or gangway. Where necessary they are *gusset*-braced, as shown in Figure 27.

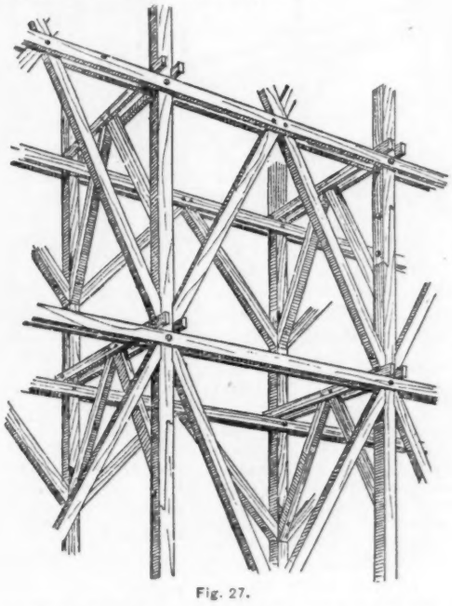


Fig. 27.

The longitudinal bracing of the inside tier of standards is shown in Figure 28; it is after the manner of the *gusset* system of bracing — the pieces butt together obliquely at the top between, and bolted to the ledger pair of scantlings. At the pavilions the bracing is similar to the single bracing of the outside tier, with counterbraces in some of the upper tiers of panels.

Transverse bracing between the outside and inside tiers of standards is similar to that of the inside tier of standards of the gusset sys-

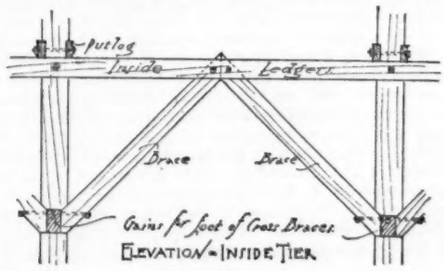


Fig. 28.

tem, the pieces gained and butting obliquely together between the pair of scantlings composing the putlogs. Figure 29 shows these two kinds of bracing in perspective. It is a portion of the scaffolding belonging to a public building erected in Paris some years ago. The pavilions have flying or jack standards introduced at the top between the main standards. They are footed upon the intersection of the upper tier of main diagonal braces.

At the pavilion where the line of the façade recedes, the returns of the scaffolding around the re-entering angles are doubled in width. The return ledgers continue through both widths of scaffolding, as well as along the intervening *return* side, *i. e.*, through the end of the part of the scaffolding in advance, as well as that portion which retreats behind it in the same main façade. This arrangement reinforces the stability by the double breadth of bracing at these points, *i. e.*, the

longitudinal bracing of the *return* portions, all combining to make a very stiff system.

In order that the standards may be at regular intervals along the centre of the east and west façades, and yet not obstruct the approaches to the quadrangle through the large arched carriage-ways, the standard which would come opposite to the centre of the archway is made a flying standard resting on the intersection of the diagonal braces, which occurs at a lower ledger, in a similar manner to the jack standards at the top of the scaffold above described.

The scaffold on a portion of the north façade, where there is a lower or curtain wall, is formed of a single tier of standards corresponding to the inner standards of the double tier. Figure 29 is a specimen of this method of construction, and shows the combination

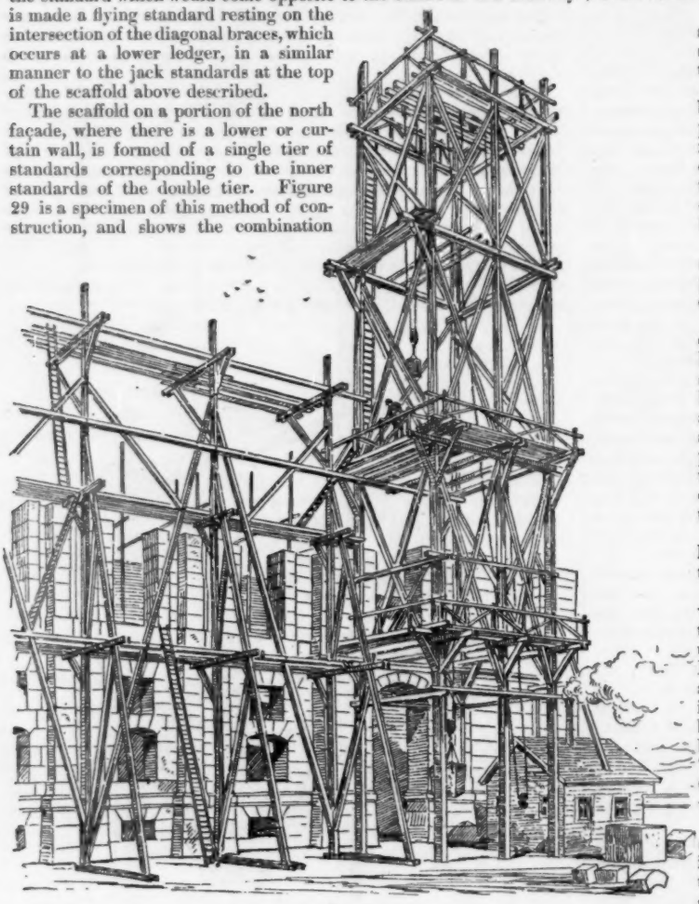


Fig. 29.

of the parts distinctly. It will be observed that the bracketed putlogs, each composed of a pair of scantlings, embrace the standards, and also the transverse raking shores there shown, and the heads of the diagonal bracket-pieces are gained and bolted between the ends of the putlogs which support the platform or gangway. These act as *struts*, whereas the long braces at the other end of the putlogs act as *ties*. It usually extends from the next lower ledger, the lowest tie extending from foot of standard. Sometimes this latter brace does not quite extend to the putlog, but is bolted to the raking shore just below it, and acts as a stay to the shore. The alternate standards are shored longitudinally both ways by long braces extending to the foot of the intermediate standards, and to a higher point on the alternate standard than the transverse shore reaches; they are bolted to all intersecting ledgers. Auxiliary bracing is introduced from the intersection of the main longitudinal shore with a lower ledger, and extends as high on the intermediate standard as does the main brace on the alternate standard.

The standards and transverse shores are footed upon the same transverse sole-pieces. Ledgers or longitudinal ties connect the standards together at certain intervals in the height, where gangways are laid on the bracketed putlogs. This description of scaffolding is only intended for light work, as the design is not suited to carry heavy stones.

A temporary inside pole-scaffolding is also shown, on which the ends of transverse planks may rest. Ladders are fixed to the scaffolding between the permanent gangways.

Stationary hoists or *sapines* are distributed at several points around the façades at the Hôtel de Ville, and reach considerably higher than the scaffolding, to allow room for tackle-hooks, counterweights, slings for blocks of stone, crate or basket suspension-chains, etc. They consist of four corner spars of rather heavier scantlings than the scaffold standards, and also four interior standards, so placed that the workmen's stairs occupy the larger central space — the two smaller spaces, one on each side, being occupied by the successive landings between the flights. The whole assemblage of standards is tied together all around at successive heights by double ledgers and putlogs abreast, all gained and bolted to the standards as in the scaffolding. The stairs are formed of cut plank strings and plank steps; along the sides of the stairs are the hoisting arrangements for raising the materials.

The same arrangements of flying-standards above described are introduced at top to support a beam or girder, which carries the hoisting-tackle. There is a winch or crab attachment for hand-power. If the hoisting is worked by steam-power there is a belt-and-pulley attachment which is driven from line shafting, worked by a donkey-engine.

For the larger class of tenement buildings the *sapine* shown in Figure 29 is usually employed. It is constructed of six standards, in two tiers, longitudinally, of three in each. It is cross-braced diagonally in each bay, all around the structure. The ledgers and putlogs are bracketed outside of the outline, on which is formed a plank gangway with hand-rail, to afford facilities for moving plank across the hoist, under blocks of stone or crates of brick, mortar, etc., as they are hoisted up to the required height for distribution to the masons. Two or more hoist tackles are intended to be in operation side by side at the same time by means of steam-power.

For smaller tenement-houses the *sapine* consists of four standards — similarly cross-braced all round in successive panels or stages. The surrounding plank gangways are omitted in the smaller class.

As Paris façades are principally built of solid ashlar, of the full thickness of the wall without any rubble or brick backing, a large quantity of heavy blocks of cut stone have to be hoisted to the required heights. The blocks of stone are usually caught in slings made of an assemblage of soft cords. The stone blocks or baskets are hoisted a few feet above the point of landing, heavy planks are then laid across the *sapine*, underneath, and the stone, etc., lowered upon them, and it is then moved on rollers along the gangway or upon planks laid upon the wall to the point where it is to be set in the wall.

Temporary ledgers are lashed across the *sapine* at heights corresponding to the advancing of the wall, and there support the cross-planks above alluded to.

This is a tedious and clumsy process and seems unworthy of a large metropolitan city like Paris, and why the French mechanics are content to continue it is unaccountable. It is much behind the American or English derrick, and the Scotch "Gabbert" crane is in advance of both, and has much to recommend it, and it seems a wonder that it is not adopted in its entirety by the enterprising contractors of this country. It is being gradually introduced into the north of England. The principal derrick-crane works in Scotland are at Glasgow; there are also two firms in Leeds, England, who make these cranes both for steam and hand power.

Figures 30 and 31 show a form of adjustable chain-stays (alluded to in the October number on p. 170) which is used in Paris, in a few instances, to fasten the ledger to the standard, instead of the usual rope lashings, also described in the same page. The screw-stud is held against the standard on the outside, so that the chain attached to it shall be in level range with the upper edge of the ledger. The chain is fastened to the collar by means of a ring or eye in a lug in one side of the collar, and on the other side of it to a hook, whereby the hook can enter a link of a suitable length of chain, and then be tightened by the screw raising the collar farther from the standard.

For the purpose of raising into position in the scaffold the large spars of which it is composed, and afterwards removing them, a mast-and-gaff arrangement (*chevre à cheverette, système Gerbald*), sometimes called the Devonport derrick in England, to which a winch is attached, is usually adopted. The mast is held in position by guys or back-stays in different directions. The gaff has a half-circle jaw which embraces the mast, a rope passing from the throat to the top of the mast. The top of the gaff, which is sometimes slightly inclined

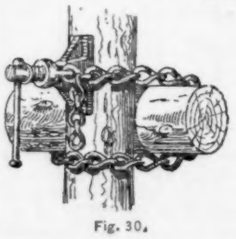


Fig. 30.

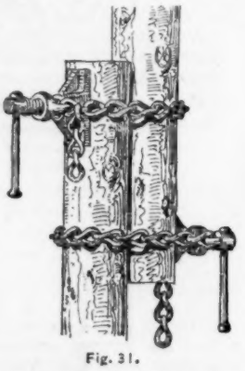


Fig. 31.

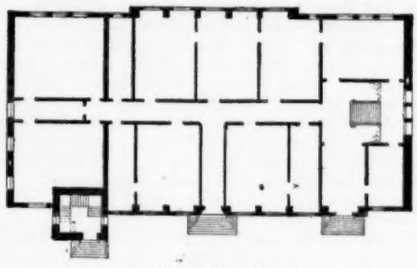
upwards, is held by a stay to the top of the mast. Swing-guys are also attached to the end of the gaff for the purpose of swinging it round the mast to lift or lower the spar in convenient positions. The hoisting-rope is suspended from the projecting end of the gaff, the fall passing through a block hooked to the throat.

Sometimes a shear-pole derrick is employed, with a winch attachment. The poles or legs are pinned together with a number of shouldered rails let into mortises in the legs, the ends being fastened with wood pins; the feet of the legs are tenoned into horizontal sole-pieces. A

block-and-tackle, the fall of which is fastened to the barrel of the winch, is made fast to the head of the derrick or *cheverette*, the lower block being hooked to a grommet[1], which encircles the spar above the middle point, so that it will swing nearly vertical when raised by the winch. Guys or back-stays run through blocks at the top of the derrick for the purpose of changing its inclination.

BUILDING SUPERINTENDENCE.—XXIX.

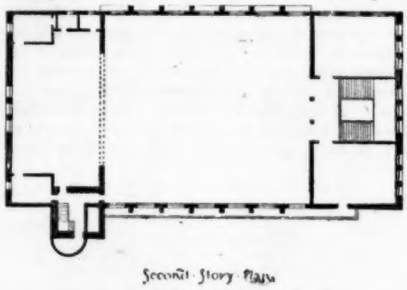
WE can now draw our definitive plans of the several stories, the horizontal section of the exterior walls being determined. Figure 190 shows the plan of the first story, and Figure 191 of the second story. The walls in the first story are substantially the same as those of the basement, so that a plan of the latter is not necessary, and we may lay out the foundation at once, as shown in Figure 192. In this it will be observed that each of the interior walls, and the plainer portions of the exterior walls, are provided with continuous foundations, but that the masonry is interrupted between the piers which support the buttresses above, although in elevation this space is occupied by a wall, which fills the area around and under the windows. One may naturally ask why this curtain wall, light as it is, should be deprived of a foundation, and it would be more usual, in fact, to lay footings for this portion of the masonry, as well as the rest. Nevertheless, an attentive study of the conditions will, we think, show that it is, under the circumstances, wiser to support this portion of the building upon isolated piers, than to build for it a continuous footing, which must be very unequally loaded. A rapid computation of the weight of the piers, as compared with that of the wall between them, will show that the former, which are approximately $1\frac{3}{4} \times 3\frac{1}{4}$ feet in



First Story Plans

Fig. 190.

section, and about 68 feet in height from the level of the basement floor, 8 feet below the curb, to the eaves, contain each about 378 cubic feet of masonry, weighing, at 112 pounds to the cubic foot, 42336 pounds, to this being added the weight of the curtain walls around the second-story windows, which, as we remember, are supported entirely from the main piers, by segmental arches sprung between them, and weigh, for the portion resting on each pier, about 23000 pounds. Besides this, the roof-trusses, which bear wholly upon the piers, bring on each an additional load, as we have seen, of 22320 pounds; while the weight of the second-story floor, although framed with beams at short distances apart, is also brought by the segmental arches just beneath it entirely on the piers, adding to the load on each the weight of $\frac{12 \times 30}{2} = 180$ square feet of flooring, equivalent, with its ordinary extraneous burden, to about 18000 pounds. The

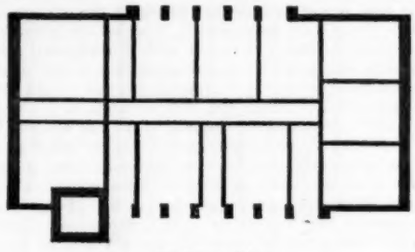


Second Story Plans

Fig. 191.

weight of the first story and basement floors would be divided between the piers and the curtain wall in a proportion which can hardly be estimated exactly, but about one-half of it would probably come on the piers, making, for two floors, an additional load of 18000 pounds. Adding these together, we find the total pressure at the level of the basement floor upon the substructure of the piers to be 123656 pounds. Dividing this by the sectional area of the piers at that point, which is $5\frac{1}{2}$ square feet, gives 22483 pounds as the pressure per square foot.

On the foundation wall between the piers we shall have the weight of 18000 pounds of flooring in first story and basement, with that of the wall as high as the second-story floor; everything above resting wholly on the piers. The openings for windows occupy most of the area, but we have left about 300 cubic feet of masonry, weighing



Foundation Plans

Fig. 192.

33600 pounds; the whole pressing upon the substructure of that portion of the building, whose sectional area below the basement windows is $10\frac{1}{2} \times 1\frac{1}{2} = 13\frac{1}{2}$ square feet, with a force amounting to 3820 pounds per square foot.

This calculation discloses a very great difference in the intensity of the pressure on the foundation under the piers, and that of the wall between them, and as the masonry of rough stone extends below the basement floor seven feet to the tops of the piles, we have just reason to fear that the compression of the joints in this masonry beneath the piers would be so much greater than in the intermediate portion, subjected to a load hardly one-sixth as great, as to cause some dislocation between the two parts of the stone-work, which would probably show itself above ground by fractures in the sills of the basement and first story windows, as well as by the opening of seams in the angles between the buttresses and the curtain wall.

If the ground were very soft, so as to make it unsafe to increase the load upon any part of it beyond a limited amount per square foot, it might be best to equalize the pressure by spreading the footings of the piers until the weight upon them was distributed over so large a surface as to make the pressure upon each foot of this surface equal to that on the footings of the curtain-wall, but it would take a great deal of stone to spread the base of the foundation to the requisite extent, and we, who can count in the present case upon a pile foundation of tolerable resistance, shall do best to abandon the idea of a separate foundation for the curtain walls, and arrange to support the whole, by means of arches turned just beneath the basement floor, solely upon the footings of the piers.

Although the pressure upon these will be increased by so doing, we can easily provide piles enough to sustain it all, and the curtain-walls, being now entirely dependent upon the piers, will settle with them as the joints are compressed under the weight of the superstructure, instead of being torn away from them by the reaction of the less strongly weighted stone-work upon which they themselves rest.

Further consideration convincing us that this is the best, as well as most economical method of construction, we have only to indicate the underground arches which we propose, as shown in Figure 193,

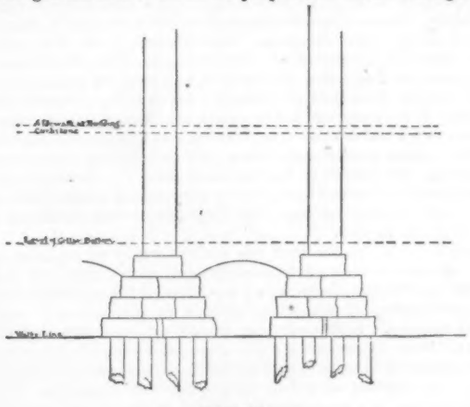


Fig. 193.

and calculate the size of footings and number of piles required under each pier to sustain the weight upon it, which must now be increased by that of the curtain wall in first story and basement, above the arches, and also by an amount representing roughly the weight of the foundation below the basement floor, which, of course, can be only provisionally determined.

Before making up our minds on this point we shall do best to test

[1] In this case a grommet is a single loop or ring of rope of suitable length to double flat around the spar, one double end of the flat loop serving as an eye for the other double end to run through, and hook to the hoist-rope.

the resistance of the hard-pan to which the piles are to be driven by actual trial, and will therefore lay out the piling-plan for the plain walls, and begin work.

Although the ground is softer than we could wish, the piles bring up generally in a stratum which allows them to sink only 2½ to 3 inches at the last blow of a hammer weighing 1600 pounds, and falling 15 feet. This, by Sanders's formula, indicates a safe resistance for each pile, in the worst cases, of $\frac{180 \times 1600}{3 \times 8} = 12000$ pounds, or six tons. We will therefore assume this as the load to be assigned to the piles under the piers, and will draw the plan accordingly, remembering that it will be necessary to watch the driving closely, so that if a soft spot should be met with, in which the piles should sink more than three inches under such a blow, additional piles can be at once staked out and driven, sufficient in number to divide the total pressure into portions small enough to come within the limit of their safe resistance, as found by a new calculation.

Down to the basement floor, the sum of all the weights borne by each pier is 175256 pounds, which would just be sustained by fifteen piles, driven to a bottom as hard as that which we have already found. We must not, however, forget that a considerable cube of masonry will intervene between the top of the piles and the basement floor, whose weight must be taken into account. The distance between these two points is seven feet, and six feet, at least, of this must be of heavy stone masonry. The remaining foot may be of brick, like the superstructure. Supposing, simply for calculation, that one extra pile would be sufficient to carry the additional weight of the foundation, we should have under each pier a group of sixteen piles. These are always most advantageously arranged in pairs, so that the stones which rest upon them, the "cappers," as they are called, may each cover two piles, and no more. It is also desirable, for the sake of saving stone, to place the piles as near together as they can be driven without forcing each other aside, or unduly disturbing the bed, and the minimum distance for this purpose being two feet from centre to centre, in such ground as that with which we have to deal, the natural disposition of our sixteen piles will be in the form of a square, measuring 6 feet on each side, from the centres of the piles. In order to cover these entirely with the capping stones, it will be necessary, as the head of the piles is from 10 to 12 inches in diameter, to make the first course 7 feet square. The second course, in order that the weight may not be thrown too much on the inner part of the capping stones, should be 5 feet square. The third course may be 3 feet by 4, and the fourth course the same. Each course will be about 18 inches high, and the whole amount of stone-work will be 147 cubic feet, weighing, at 125 pounds per cubic foot, 18375 pounds. The extra foot of brickwork between the top of the stone foundation and the basement floor will weigh 622 pounds. Adding all the weights together, we shall arrive at a total of 175256+18375+622=194253 pounds, or 97 tons, to be supported by 16 piles, giving a load of $6\frac{1}{16}$ tons each.

If the bottom under the piers should be found as firm as where we are now driving, the piles sinking not more than three inches, and generally less, at the last blow, with a 1600-pound hammer and 15-foot fall, we should be quite safe in adopting this arrangement, and we will stake out the piles under the piers accordingly, leaving, however, some person to watch the driving, with strict injunctions to mark on the piling-plan, of which he has a tracing, the actual sinking at the last blow of every pile, with the height of the fall; while we inspect the timber delivered on the ground, and observe the operations of cutting off the heads of the piles and laying the first course of stone, both of which are already in progress at one corner of the building.

The piles on the ground are straight spruce sticks, with the bark on, varying from 30 to 40 feet long. Here and there is visible a crooked specimen, or one the heart of which is evidently rotten, and we mark all such for rejection. The driving of the first piles has shown that the comparatively firm stratum upon which they must rest is about 31 feet below the surface, and men are engaged in cutting off the small ends of the longer piles to bring them to this dimension. It is important not to penetrate through the bearing stratum, as the ground is shown, by driving a long experimental pile, to grow soft again immediately below; all that is necessary or safe is to continue the blows of the hammer until the firmer ground is reached, which will be shown by the diminished penetration of the pile at each impact, giving then only one or two additional blows to settle it into its bed.

There is some danger that the workmen may surreptitiously endeavor to save trouble for themselves, and money for their employers, either by driving the pile only a portion of the required distance, and then cutting it off, or by putting in shorter, and therefore cheaper timbers. Either of these frauds will probably be followed, sooner or later, by serious consequences, and the only way to guard against them effectually is to witness in person, or by an intelligent deputy, the driving of every pile. We are somewhat in doubt whether it may not be necessary to send away all the 30-foot piles, of which there are several on the ground, for the reason that although they would be long enough to reach from the hard stratum to the water-line, they lack about two feet of the length necessary to extend from the hard bearing to the present bottom of the excavation where the machine stands. This, for convenience in working, is not dug down to the water-level, and there is danger that the short piles may be simply driven to the head in the ground and left there, with their feet still some distance from the stratum on which they ought to rest; but in consideration of the promise of the contractor to bring no more of the same kind, we consent to have them driven in our presence, each one, after driving to the head, being sunk farther by means of a "follower," or short piece placed on top of it, until the bearing stratum is reached. When the trenches are excavated to the water-line, which will be done as soon as the machine is out of the way, the followers will be dug out, and the piles under them will then be as useful as any.

The operation of digging out the piles is already in progress in another place. The level of the water-line, or rather, of the point at a certain distance below the average water-line where we have directed the piles to be cut off, is fixed with reference to a mark on the side of the excavation, and a steam-pump is at work to keep the trenches clear of water until the earth has been removed to a proper depth, the heads of the piles cut off at a uniform level, and the capping-stones laid. Two men, with a cross-cut saw held between them, are bending over in the mud, sawing off the top of a pile, which another man holds to prevent it from falling upon them. Observing them from a distance, we notice that in order to relieve their backs as far as possible from the fatigue of stooping, as well as to keep their knuckles out of the earth and water, they hold the saw very much bent, so that it makes a concave, instead of a level cut across the head. As we approach, the head of the pile, just severed, is purposely tumbled over their work, and the men begin another cut, this time with the saw held straight between them. Looking about the trench, we notice that one-third or more of the piles already cut off exhibit the concavity due to the bending of the saw, while others have an oblique head, and a few are cut an inch or two higher than their neighbors. Any of these defects may compromise the safety of the building, either through the crushing of the edge of a concave cutting under the weight of the superstructure, or the tilting of a capping-stone supported at one end on a pile cut obliquely or out of level; and calling the attention of the men, we point out the defective work, and direct them to recut the piles properly on the spot, waiting to see our orders obeyed.

While thus engaged we have leisure to watch the stone-laying just beyond. The adjustment of a roughly-split stone upon the heads of two piles, so that it may have no tendency to rock or move in any way under the great and varying pressure which will be placed upon it, is a difficult matter, and the work should be sharply looked after. The usual way is to place the stone in position, and then wedge up with stone or even wooden chips between it and the head of the pile, until it ceases to move when shaken; but this mode is open to many objections. Wooden chips are of course inadmissible, since they crush immediately under a strain, and stone "pinners" are liable to be broken or dislodged, leaving the block which they were intended to sustain in a condition of dangerous instability. The best, although the most troublesome method of capping, is to select only the stones with comparatively flat beds, and lay them on the heads of the piles, shifting them about, before they are detached from the derrick, until they rest immovable. They will then need no pinning or wedging, and can be depended upon to sustain without moving the load which is to be placed upon them. If wedging should be found absolutely necessary, as may sometimes happen, the stones used to pin up with should be well-shaped, strong, and securely placed upon the head of the pile, so as to be in no danger of shaking out or crumbling. With the same object of avoiding all tendency on the part of the capping-stones to rock under the load, no stone should rest upon more than three piles, unless both it and the heads of the piles have been dressed to a perfectly plane surface, and with rough stones it is not easy to get a good bearing even on three piles at once.

After explaining our ideas on these points to the foreman of the stone-layers, whose opinion coincides with our own, we return to the front wall, where the pile-driving machine has arrived before us, and are troubled to find that the ground appears softer there than under the other portions of the structure. As we approach the row of isolated piers forming the middle of the front, the piles sink under the last blow of the hammer from three to four inches, instead of two and one-half or three inches, showing that a variation has taken place in the texture of the clay stratum upon which they rest. A trial pile driven by means of a follower to a depth of 40 feet sinks at that distance more rapidly than ever, and we are forced to the conclusion that the bottom at 31 feet, although poor enough, is the best to be had. A simple calculation is, however, sufficient to show that it is unsafe to trust the weight of the piers upon it without adding to the number of piles under them, and thus diminishing the

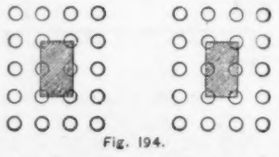


Fig. 194.

load upon each point of support. Supposing the sinking of each pile at the last blow, under the actual conditions, to be four inches, the weight which it could be relied upon to sustain safely would be 4½ tons, and the number needed to support the load of 194253 pounds, which was previously calculated as the weight on each pier, would

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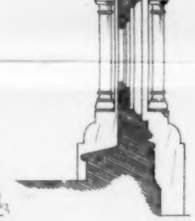

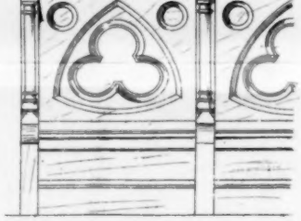

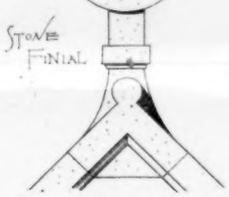

EMMANUEL CHURCH, AT SHELBURNE FALLS, MASS.

MESSRS. VAN BRUNT & HOWE, ARCHITECTS, BOSTON, MASS.

SOUTH WEST VIEW.

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EAST ELEVATION

SECTION THROUGH CHOIR & APSE

INTERIOR VIEW

FRONT OF STALLS

SIDE ELEV. OF STALLS

SCALE FOR DETAILS 1 2 3 FEET

STONE FINIAL

A NAVE WINDOW

IRON FINIAL TO SPIRE

PLAN

PORCH

NAVE

CHOIR

ARCH

APSE

VEST.

SACRISTY

ABBEY

CHAPEL

SCALE 5 10 15 20 25 FEET

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VIEW

FIRST FLOOR

PARLOR 13 × 15

Passage

LIVING ROOM 15 × 19

HALL 11 × 13

KITCHEN 15 × 16

PANTRY

REAR PORCH

CELLAR

To Cellar

PUMP

SECOND FLOOR

ROOF

BED ROOM 14 × 15

BED ROOM 13 × 15

BED ROOM 11 × 11

BATH 6 × 7

SERVANT 13 × 14

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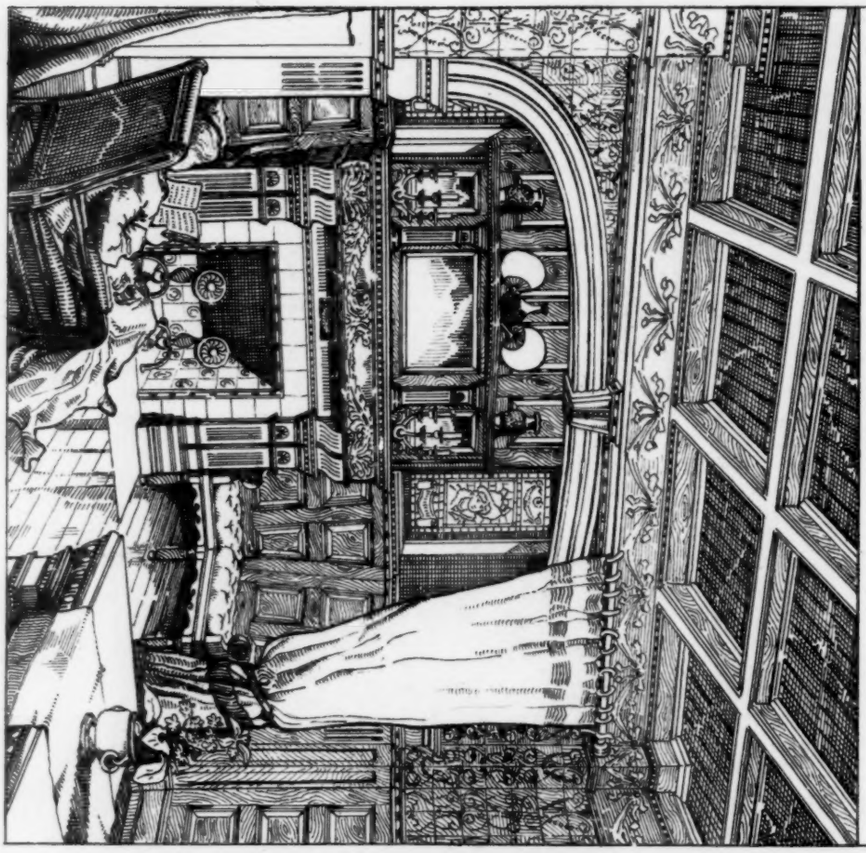

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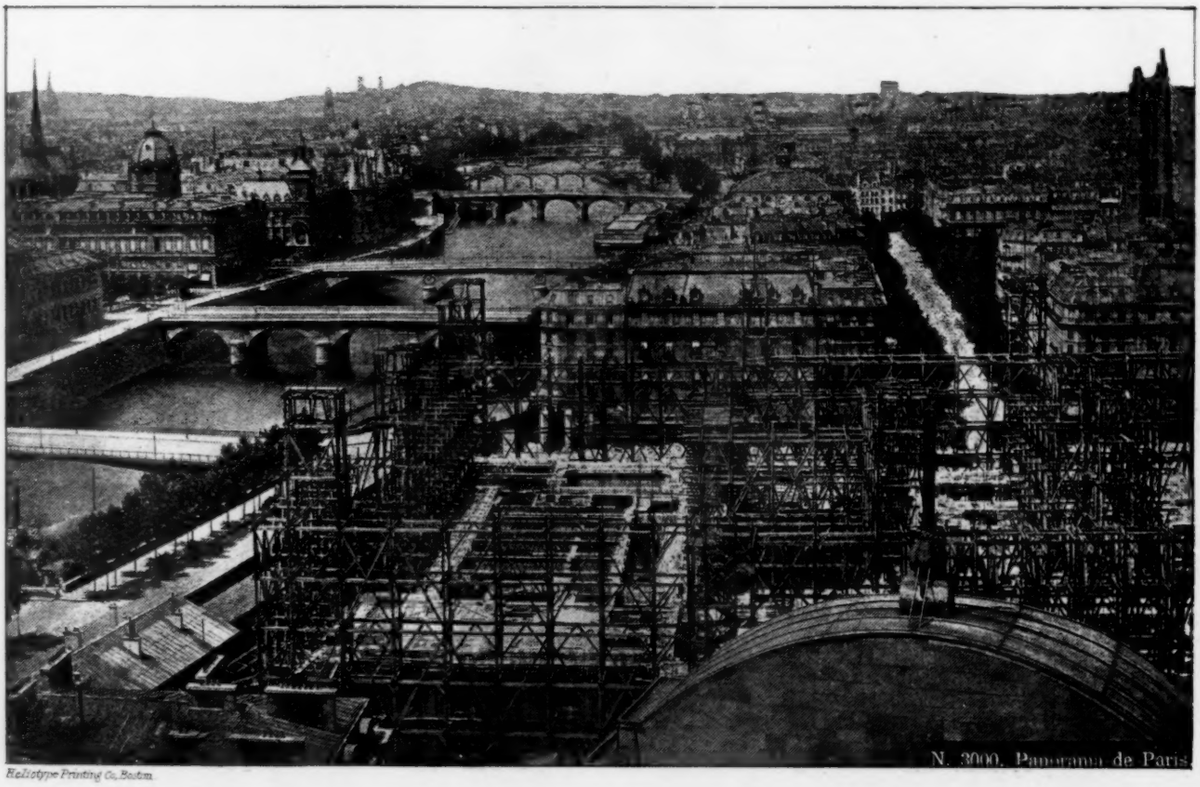

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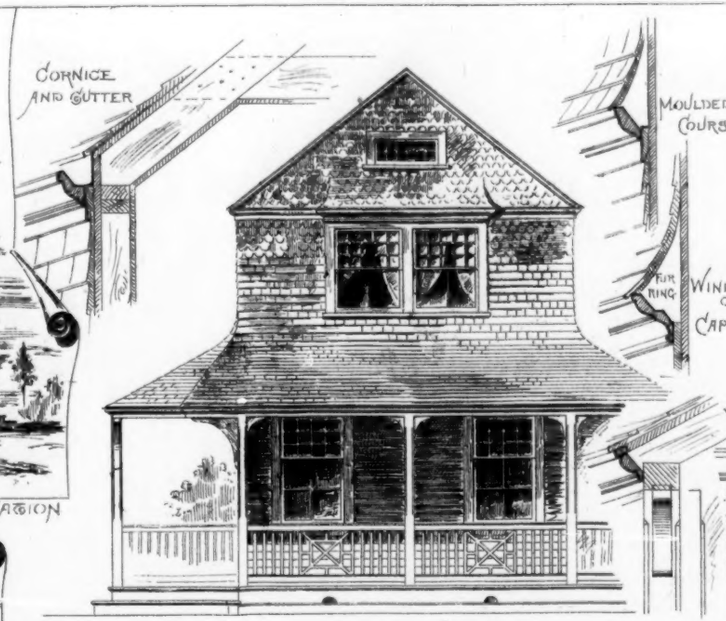
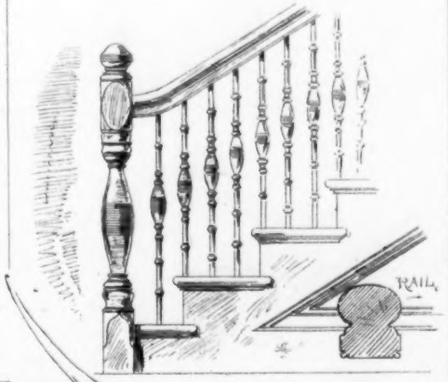
Side Elevation



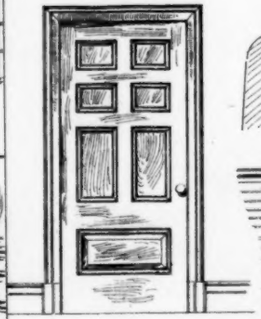
Front Gable



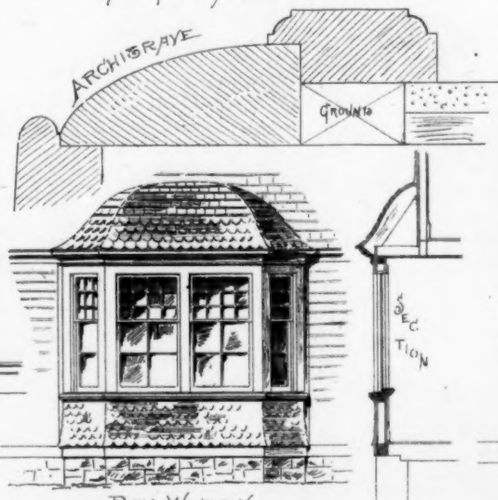
Staircase

Veranda Details

In Sitting Room.



Inside Door



Bay Window

Base

Outside Door

Window Finish
First Floor

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be 22, allowing for the slight additional weight of stone required to cover the more extended base.

The ground is, however, hardly so soft as this, the average being about 3½ inches sinking at the last blow, and we shall be safe in changing our plan, and staking out 20 instead of 16 piles under each pier, as shown in Figure 194, remembering that if the ground should grow still worse it will be necessary to add to the number by driving extra rows on each side. Happily, this does not prove to be the case, and we are able, when the driving is over, to rest assured that whatever else may befall our building, the failure of the piles is not to be feared.

THE ILLUSTRATIONS.

COMPETITIVE DESIGN FOR A $3,000-HOUSE SUBMITTED BY "*Vie.*"

SHOULD any of our non-professional readers desire to build according to this design, we trust he will do the author the simple justice of putting the work into his hands. We shall always be pleased to put client and author into communication with each other.

For a criticism of this design, see the following article.

EMMANUEL CHURCH, SHELBURNE FALLS, MASS. MESSRS. VAN BRUNT & HOWE, ARCHITECTS, BOSTON, MASS.

HOUSE FOR J. HARRIS, ESQ., NEW ORLEANS, LA. MR. H. WOLTERS, ARCHITECT, LOUISVILLE, KY.

VIEW OF PARIS SHOWING THE SCAFFOLDING OF THE NEW HOTEL DE VILLE.

SEE article on "Builders' Scaffolding" elsewhere in this issue.

FIREPLACE IN THE LIBRARY OF LUTHER DOCK, ESQ., PHILADELPHIA, PA. MESSRS. HAZLEHURST & HUCKEL, ARCHITECTS, PHILADELPHIA, PA.

THE LATE AMERICAN ARCHITECT COMPETITION.

REPORT OF THE JURY. — IV.

"*QUID NUNC*" may live in some happy land where bricks and mortar, stone and concrete, are to be had for the asking, otherwise at the first appearance his four chimneys, and his continuous foundation-walls under all partitions, where piers would have sufficed, would make a sum total which would not allow him to build upon his generous plan. Besides his dining-room and parlor he has a library, and has permitted himself the luxury of many breaks in the outline of his house. The general plan, however, is well-disposed, the chief defect lying in a door from the kitchen opening directly into the main hall. This could have been avoided, as well as an unnecessary projecting angle in the hall, by starting the stairs differently, and letting this door to the kitchen open under the upper portion of them. Thus a lobby would have been formed to check the cooking odors. The chambers, four in number, are well arranged, but the absence of an attic sacrifices one of them to the servant. Greater experience would have shown "*Quid nunc*" that for the cost of his numerous dormers he might, with a simpler roof, have gained a fair attic chamber. While the plans show careful study and thought, the exterior and the drawings show inexperience and lack of simplicity. A multiplicity of insignificant features leaves no rest for the eye. In like manner the drawings lack firmness and breadth of handling.

"*Quoin*" suffers the penalty of not presenting an excellent design as brilliantly as several of his competitors who have substantially the same scheme. His plan is one of the most popular types — convenient and economical. The exterior, by clever drawing, might have been made more interesting, but as it is, it represents a plain, comfortable cottage, such as would commend itself readily to the average house-seeker, but with no claim to any distinction above its neighbors. In this latter requirement lay the chief difficulty of the programme. "*Quoin*" can, however, certainly claim to have presented a cottage which would find ready sale, for its expense would cover all the accommodations demanded. It may be added that the detail-sheet is unusually good.

"*Vie*" [*See Illustrations*] has much the same plan as the preceding, but with the advantage of having a vestibule, and a fireplace in the dining-room. The exterior, too, is drawn with more grace and spirit, and in design is a trifle less commonplace. "*Vie*" has kept his estimate within the $3,000, but to make the house such as it should be he should add to his items plumbing for one bath-room, which he has omitted. Whereas "*Quoin*" had the courage to insist on six per cent for the architect's commission, — none too much if the house is to be any better than its average neighbors, — "*Vie* claims only three and one-half per cent. But all considered this house could be made complete and keep within a fair limit. It may be said here that in consideration of the wording of the programme the jury have considered that the outside limit of cost should be $3,500, due allowance being made to those keeping nearest to the $3,000. "*Vie*" draws well, and has made a pretty view of the interior of the sitting-room.

"*Burns*" has a long, narrow plan — longer than is necessary, since he has a bedroom down-stairs, besides four on the floor above, and room for another in the attic. In the place of this ground-floor bedroom, opening with folding-doors into the parlor, most of his competitors with a similar plan have wisely put the dining-room, thus getting a more compact plan. The second floor is well-arranged, except the bath-room, which, coming over the large rooms below, is provided with no opportunity to have pipes properly carried down. The design of the exterior is thoughtfully treated, and leaves little opening for criticism, though a less formal and labored perspective would have shown it to better advantage. If the detail-sheet shows nothing novel, it gives no cause for offense.

"*Domus*" (No. 2) is evidently one of the most practised designers in the competition, his elevation being one of the most architectural in treatment. Note the clever way in which his gable, with its half-timbering, is combined with the large window. The rough-cast, also, is well managed. There is one serious defect, however, in the roof, which has a dangerous valley. This fault is the more to be regretted in that the plan entitles "*Domus*" to one of the first places in the competition. Both above and below economy and convenience find every requirement fulfilled. Wittingly or unwittingly, the author has adopted a device very like a fraud. On his plan a bath-room is shown, with water-closet and bath-tub drawn out; to be sure, "unfinished" is printed across it, but that is not enough to warn one that the plumbing is practically left out of the estimate, which should include the pantry-sink and a hopper water-closet shown. A perusal of the items of cost shows that $18.50 is all that has been counted upon for the generous amount of plumbing shown on the plans. The furnace might have been left for the owner to furnish, but it is more than misleading to leave out the plumbing in an architect's formal estimate of the cost of a building. The item for painting is quite inadequate, in spite of the well-known name of the painter offered as guaranty.

"*Suburban*" shows the worst of vernacular designs. An embryo carpenter could not do worse; but the vulgar details and clumsy touch have an honest sincerity about them which promises well. Let "*Suburban*" study good examples by trained designers, and let him examine patiently good drawings, and he will surely improve, for his plan shows intelligence, and all practical difficulties are well met and mastered.

No contrast to the preceding design could be greater than that which "*Qu'en*" offers us. Self-conscious and affected, full of clever conceits which are pushed into mannerisms, this competitor's remarkable facility is his stumbling-block. While nothing could be more charming than his design, if considered as the plaything of a wealthy owner, on the other hand it is utterly unsuited for our purpose, while the one or two servants of the modest establishment proposed could never give the constant care necessary to keep clean the numberless little panes indicated, and these themselves and their curving sashes and cornices are costly luxuries. Again, the charming hall, occupying two stories, is far beyond our straightened means; so is the pretty carving which is nonchalantly scattered through the design. In spite of any relief such joyous extravagance may have been to the jury after the plain, economical schemes presented, this design is evidently not a solution of the programme. The plan is clever and full of decorative points, without sacrificing comfort, but it is also ingeniously expensive. The fireplace of the hall crowds upon the door inconveniently. The drawings are brilliantly rendered.

"*As You Like It*" has a very economical plan as far as its area is concerned, but in putting his kitchen in the cellar, and making his first story of brick, his expenses in reality will push hard upon our widest limits of cost. Drawing-room and dining-room can be thrown into one spacious *suite*, giving an appearance of generous size, in spite of the careful economy shown elsewhere. The bedroom story is simply arranged, with two large and one small chamber. In the attic there is space for several rooms. The perspective shows a straightforward elevation with a gambrel, which, if not quite satisfactory, is better than most attempts to use this kind of roof. The judicious simplicity which the author shows throughout his design makes the jury especially regret that it arrived after the prescribed time, and was therefore put *hors de concours*.

Shakespeare does not bring luck, it would seem, for another competitor, "*Twelfth Night*," also comes to us marked "H. C.," as being received too late. This design is, however, by no means as good as the preceding one. The hall is too large, and its fireplace a luxury beyond our means. The parlor and dining-room, with the chambers above, are of unwarranted size; otherwise the plan is good. The same faults do not apply to the elevation, which is as economical as possible, and with some good points. The chief merit in this design, however, lies in the details, the view of the hall and stairs having very attractive features. Note the panels of the fireplaces.

Ambition has carried "*T-square*" away, but is also the chief merit of his design. In the first place, he has laid out too ambitious a scheme. Without entering into a discussion of his own or his builder's estimate, it is not probable that such a house could be built with its plumbing in the neighborhood of any city. He has a

hall much larger than is needed, and five rooms — not including bath-room — besides several attic rooms. The question of the cost of the house aside, the plan is good, and worked out with commendable care. His china-closet, however, would be such an ill-lighted affair as few housekeepers would tolerate. The exterior is as ambitious as the plan, but, though considerably broken up, is kept well massed. More pains than skill is revealed by the drawings, but we are willing to rank for future results the former quality as the most valuable.

(*To be continued.*)

THE $3,000-HOUSE COMPETITION. — X.

SPECIFICATIONS IN BRIEF SUBMITTED BY "*Vie.*"

THE house is to be located in a country village, a few miles distant from the city where the proprietor has his business. It stands upon high ground, and upon a sandy subsoil. The style of building adopted is that of the old Connecticut farm-house, both on account of surroundings, and because the extreme plainness of the exterior finish will admit of a little more generous expenditure on inside comforts. Enough money has been estimated for labor to permit a strong and thorough construction throughout, and this is demanded.

MASON WORK.

Excavation:— Mason to save top soil and to do all necessary grading about the building with same. Excavations to extend 8″ beyond the line of outside of stone wall. The stone walls for foundation to be well built in mortar of two parts cement to one of lime; to be thoroughly bonded; stones to be laid on their broadest beds; outside of wall to be as well built as inside, and to be carefully pointed. Wall to be 18″ thick.

Bricks to be good merchantable, and for piers and chimney-tops, to be laid in cement-mortar. Chimney flues to be smoothly pargetted.

Plastering:— The plastering in first story to be the best three-coat work; in second-story, two-coat work, left for papering.

CARPENTER'S WORK.

Carpenter's work to be well and thoroughly done throughout. All timber in frame and floors to be of size sufficient to give ample strength, and bracing and trussing to be used wherever necessary.

Frame:— The house to have a balloon-frame, with plate at second-story level all round. Sill, 6″ x 6″; posts, 4″ x 6″; studs, 2″ x 4″, etc.

Floors:— Floors to be of good quality 1¼″ spruce, in widths not to exceed 4′, thoroughly blind-nailed. Kitchen floor, 1¼″ yellow-pine.

Doors to be 1¼″ thick, moulded. Sash to be 1¼″ thick, glazed with small panes in upper sash.

Inside Finish: — Finish in Hall, Parlor and Sitting-room, to be 4½″ moulded, as shown; elsewhere to be 5″, with small bead. Base in best rooms, 9″ wide, in two sections; elsewhere, 8″ wide, bevelled. Finish to be put up after plastering is dry.

Stairs:— The stair-rail, balusters and newels to be of good cherry, thoroughly filled.

Hardware:— All hardware and trimmings to be plain and simple, but of good quality and strong. All lumber in veranda to be of good pine; underside of roof-boards and rafters to be planed.

Earth-Closet: —Moule's dry-earth closet to be used, and to be carefully fitted and cased with good pine.

Gutters and Conductors:— Gutters and valleys to be of M. F. charcoal tin, well soldered and painted. Conductors, I. C. tin.

Well and Pump:— House to be supplied with water by a driven well, and to have pump at Kitchen sink.

Sink:— Kitchen sink to have lead waste with S-trap, and to be drained, by 4′ tile, to a tight cesspool 6′ x 8′, removed twenty feet from house.

Painting:— House to be painted outside, and inside three coats of paint. Kitchen doors grained. Inside wood-work painted light pearl gray or drab in two shades. First story outside, a light shade of olive green; all shingle work above to roof, to be painted light red.

Mantel:— Mantel in Sitting-room of brown ash.

ESTIMATE OF QUANTITIES AND PRICES RULING AT HARTFORD, CONN.

MASON'S WORK.

225 sq. yds. excavation and grading,	@ $ .25	per yd.,	$ 56.25	
127 perch stone foundation walls,	" 3.25	" pch.,	412.75	
6635 brick, laid,	" 12.00	" M.,	79.62	
658 sq. yds., plastering,	" .30	" yd.,	197.40	
34 ft. bluestone,	" .50	" ft.,	17.00	
100 sq. yds., cementing, cellar-bottom,	" .25	" yd.,	25.00	
20 ft. drain tile,	" .25	" ft.,	5.00	
21 " 5 in. ornamental tile,	" .25	" "	5.25	
8 sq. ft. Brockadella marble hearth,	" .25	" "	2.00	
Driven-well,			15.00	
Total of Mason work,				$ 815.27

CARPENTER WORK.

7840 ft. spruce timber,	@ $19.00	per M.,	$ 148.96	
2675 " siding,	" "	" "	50.83	
1457 " roof-boards,	" "	" "	27.68	
17444 shingles,	" 6.00	" "	104.66	
1098 ft. clapboards,	" 30.00	" "	32.94	
2500 " spruce flooring,	" 25.00	" "	62.50	
300 " yellow-pine flooring,	" 50.00	" "	15.00	
869 " outside finishing-lumber,	" 55.00	" "	47.80	
419 " moulding,	" .10	" ft.	41.90	
100 " furrings,	" 19.00	" M.,	1.90	
1575 " inside finishing-lumber,	" 55.00	" "	86.50	
298 " moulding,	" .01½	" ft.,	5.21	
318 " "	" .03½	" "	10.33	
81 " "	" .00½	" "	.70	
75 " "	" .02¼	" "	1.69	
Mantel,			25.00	
29 window sashes,	" 2.75	per sash,	79.75	
7 doors,	@ $5.00	per dr.,	$35.00	
16 "	" 3.00	" "	48.00	
25 pairs hinges,	" .25	" pr.,	6.25	
500 lbs. weights,	" .01¾	" lb.,	8.75	
450 ft. rope,	" .00½	" ft.,	1.50	
2½ doz. pulleys,	" .30	" doz.,	.70	
2½ " locks,	" 2.00	" "	4.67	
4 " knobs,	" 3.00	" "	12.00	
14 locks and latches,	" 1.00	" lock,	14.00	
6½ doz. latches,	" 3.00	" doz.	3.50	
25 ft. saddles, cherry,	" 70.00	" M.,	1.75	
8 " sills, oak,	" 50.00	" "	.40	
10 " stair-rail, cherry,	" .25	" ft.,	2.50	
33 balusters, "	" .25	each,	8.25	
2 newel-posts, "	" 2.50	"	5.00	
66 ft. cellar and attic steps,	" 50.00	per M.,	3.30	
76 " "M. F." tin gutter,	" .25	" ft.,	19.00	
52 " " valleys,	" .08	" "	4.16	
98 " conductors,	" .15	" "	14.70	
40 " hot-air pipes,	" .40	" "	16.00	
7 registers,	" 3.50	each,	24.50	
Sink,			3.00	
20 lbs. lead pipe,	" .07	per lb.,	1.40	
Door-bell,			5.00	
8 doz. closet-hooks,	" .25	" doz.,	2.00	
600 lbs. nails,	" .05	" lb.,	30.00	
300 " sheathing-paper,	" .03	" "	9.00	
Dry earth-closet, painted pine, including reservoir,			30.00	
672 ft. spruce-timber, VERANDAS:	" 19.00	per M.,	12.82	
1654 " pine-lumber, VERANDAS:	" 50.00	" "	82.70	
57 " moulding, VERANDAS:	" .08½	" ft.	4.55	
2400 shingles, VERANDAS:	" 6.00	" M.,	14.40	
Pump,			8.00	
Total of joiner's materials,				1,180.15
Labor and contractor's profit,				600.00
Painting,				250.00
Architect's charges,	" .03½	per cent.,		105.00
Grand Total,				$2,950.42

NOTE I. — All of these estimates were received from *first-rate practical builders.*

NOTE II. — There is left a balance on hand of $19.58 for which doubtless the *mistress* of the house will find excellent use before the building is completed.

NOTE III. — The furnace is not included, but all vertical pipes and registers are put in, ready for it. "*Vie.*"

PITCH-PINE.

ON this subject there does not appear to be any direct information. Loudon tells us that the pitch-pine tree supplies nearly all the resinous matter used in the United States in shipbuilding. Formerly tar was made in all the lower parts of the Carolinas and Georgia, but at present this manufacture is confined to the lower districts of North Carolina.

The resinous products of this pine are turpentine, scrapings, spirit of turpentine, resin, tar, and pitch. Of these turpentine is the raw sap of the tree, obtained by making incisions in the trunk. It begins to distil about the middle of March, when the circulation commences, and it flows with increasing abundance as the weather becomes warmer, so that July and August are the most productive months.

The sap is collected in what are in America called "boxes." These are incisions, notches, or cavities, cut in the tree, about 3 inches or 4 inches from the ground, generally of a sufficient size to hold about three pints of sap, but proportioned to the size of the tree, the rule being that the cavity shall not exceed one-fourth of the diameter of the tree. These cavities are made in January or February, commencing with the south side, which is thought the best, and going round the tree. About the middle of March a notch is made in the tree, with two oblique gutters to conduct the sap that flows from the wood into the box or cavity below. In about a fortnight the box becomes full, and a wooden shovel is used to transfer its contents to a pail, by means of which it is conveyed to a large cask placed at a convenient distance. The edges of the wounds are chipped every week, and the boxes, after the first, generally fill in about three weeks. The sap thus produced is used as turpentine without any preparation, and is called "pure dripping." The scrapings are the crusts of resin that are formed on the sides of the wounds, and these are often mixed with the turpentine, which, in this state, is used in the manufacture of yellow soap, and is called "Boston Turpentine." Long-continued rains check the flow of the sap, and even cause the wounds to close; and for this reason very little turpentine is produced in cold, damp seasons. In five or six years the tree is abandoned, and the bark never becomes sufficiently healed to allow of the same place being wounded twice.

All the tar in the Southern States is made from the dead wood of the pitch-pine, consisting of trees prostrated by time or by the fires annually kindled in the forests, of the summits of those that are felled for timber, and of limbs broken off by the ice that sometimes overloads the trees. As soon as vegetation ceases in any part of a pine tree, its consistence changes, the sap-wood decays, and the heart-wood becomes surcharged with resinous juice to such a degree as to double its weight in a year, and this accumulation increases for several years. Dead wood is thus productive of tar for several years after it has fallen from the tree.

We find no author dealing with the question of the value of the wood of the pitch-pine tree after it has been tapped for turpentine; but it must, of necessity, be lighter, softer, and less durable in quality than in a natural state. Loudon gives us a parallel case in the larch tree, where it is most prolific, viz., in the Briançonnais and Vallais. After describing the process of tapping the larch, which is very similar to that of the pitch-pine tree, he says: "A full-grown, healthy larch, if tapped when of the proper age will yield 7 or 8 pounds of turpentine every year, for forty or fifty years. The wood of a tree from which the resin has been extracted is never used for building purposes; it is indeed only good to burn; and the charcoal made from it is very much lighter than, and very inferior in every respect to, that made from trees which have not been deprived of their resin."

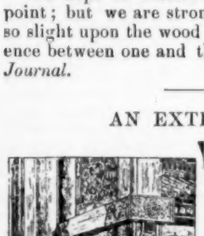
In dealing with the Scotch fir, and the forests of Scotland and the north of Europe, we find numerous allusions to the tapping of trees for turpentine, but none to the quality of the wood for commercial purposes being damaged thereby. With regard to the pitch-pine and the Scotch fir, it becomes a matter of doubt whether the heart-wood is affected in its quality by this operation.

On this subject also more information is to be desired, and we should be glad to hear from some of our correspondents on the subject. We have the evidence of Loudon, in connection with the tapped wood of the larch, that wood of this class is inferior, and even unfit for building purposes; but it is questionable whether inferiority of this description would travel to the pitch-pine, for it is a fact that we hear nothing of an inferior or "tapped" quality of wood in the trade. We have, it is true, a kind and soft class of wood shipped from Savannah, and a strong, hard quality from Pensacola and Darien: these we take to be the result of different soil and locality and not of tapping for turpentine. We have again the fact that this tapping operation is carried on in connection with the Scotch fir (*P. sylvestris*) in the forests of Northern Europe, and of absolute silence in regard to deterioration in the quality of the wood. We never hear of an inferior or tapped class of redwood in the trade, which, to say the least, is somewhat remarkable; for, next to the pitch-pine tree, it is the one most drawn upon for resinous products.

There is considerable evidence that the tapping of pitch-pine trees interferes but little with the nature or quality of the heart-wood. It aims at the fluid sap, or the essential oils, which are soluble in water, and volatile in character, and confined to the outer zones of the tree. It has but little bearing on the heart-wood, where the secretionary matter has become resinous, crystalline, and insoluble, and can only be extracted by heat or fire. The one is the vital or active fluid of the tree, the other the dead and passive secretion, unamenable to the tapping or bleeding influence. We take it that a mature tree, upon being tapped, would undergo little or no change in its heart-wood, the influence at work being a weakening of the vegetable action, not an extermination, the result being a diminished amount of foliage and a contracted annular ring of wood. It would incline the tree to carry a less amount of sap-wood, and to a more rapid formation of duramen, or heart-wood, although the latter might not be so strongly impregnated with resinous matter.

We hope to receive further correspondence on this interesting point; but we are strongly of opinion that the tapping influence is so slight upon the wood as a marketable commodity, that the difference between one and the other is imperceptible. — *Timber Trades Journal.*

AN EXTRAORDINARY BUILDING.



DETAILS OF EAST GATEWAY OF TEMPLE, NEAR KIOMIZU-DERA, KYOTO.

THE narrowest house in New York may be seen at the northwest corner of Lexington Avenue and Eighty-second Street. When Lexington Avenue was cut through some years ago, a strip of land five feet wide and one hundred feet deep was all that was left of a certain lot belonging to a person who did not own the next lot on the street. The strip, while of little value by itself, would be valuable to the person owning the adjoining lot on Eighty-second Street, because it would not only enable him to build a house five feet wider, but would give him windows all along the side of his house on Lexington Avenue. The two owners, however, could not agree as to terms, and a house was erected on the lot adjoining the narrow strip. The owner of the latter had nothing to do but to abandon his lot or build a house five feet wide upon it. The latter course was perhaps adopted because such a house would shut up all the side windows of the neighboring building, and considerably reduce its value.

The new building, which has been finished for some months, is therefore 5 feet wide, 100 feet deep, and 4 stories high. It is divided into two houses, each fifty feet long, and the entrance doors are, of course, on the Avenue, as there is no room for a door at either end of the building. The law allows a building at the corner of a street to have projecting bay-windows along the side, and taking advantage of this circumstance, the architect has managed to plan a house which, while peculiar in inside appearance, and probably very uncomfortable to live in, may find tenants. Without these bay-windows or square projections running from the foundations to the roof it would not have been possible to build a house at all, for no room would have been wider than three feet. Each house has, therefore, two bay-windows, in one of which are the stairs and in the other one room about eight feet wide by fifteen feet long, upon each floor. The long passage between the stair-well and the room is about three feet wide. Each house contains a kitchen 8′ x 15′, and four rooms, each of the same size, but on different floors. There are also ingeniously-placed closets at each end of the building and under the stairs. Both houses are unoccupied. One is offered for rent at $500 a year.

If the object of the builder of these extraordinary houses was simply to shut out the light from his neighbor's-building, he would probably have accomplished the same end at much less expense by adopting Mr. George Kemp's device of sheet-iron shields. Mr. Kemp did not wish the occupants of the building in the rear of his house, at No. 720 Fifth Avenue, to overlook his premises, and so he built an iron scaffolding in his back yard and placed iron shields against the obnoxious openings, shutting out air and light as completely as a brick wall would have done. This arrangement has been for years the source of no little comment from the neighbors and passers-by. — *New York Evening Post.*

MONTHLY CHRONICLE.

MARCH 16. Burning of the theatre at Lima, Peru.

April 1. The old Opera-House at Augusta, Ga., is burned, early in the morning.

Burning of the National Theatre, Berlin, Germany, in the afternoon.

April 6. The front walls of two old houses on Mary Street, Philadelphia, fall out. No one hurt.

April 8. The Eade Hotel at Greenville, Tex., falls. Fourteen persons killed or burned, and others injured.

Burning of the Logan House, Murphysborough, Ill. One man burned to death.

A hurricane passes over the country south of Hot Springs, Ark. Several lives lost.

April 10. Fall of J. F. Carter's building on State Street, Rochester, N. Y., in course of construction, caused by laying bricks in freezing weather. Two men killed and several injured.

Burning of the Ansonia Hotel, Ansonia, Conn.

April 11. One thousand buildings at Mandalay, Burmah, are burned.

April 12. Tornado passes over Milan, O. Several persons killed and injured.

Gas-explosion in the Theatre at Revel, France, causes a panic during which many are killed and injured.

April 14. A tornado passes over White Oak Station, Ark., doing damage to life and property.

April 15. Burning of the Opera-House at Union City, Pa.

Collapse of a grain-elevator at Winnipeg, Manitoba.

Burning of the Atlantic House, Albia, Io. Three persons burned to death.

April 16. A portion of the walls of the Galliger Building near Main Street, Rochester, N. Y., fall at midnight. Also a dwelling in course of construction in another part of the city. No one hurt.

April 19. Fall of two floors of the Lithgow M'fg. Co.'s foundry, Louisville, Ky., caused by overloading. No one hurt.

Part of a building in course of construction on Twenty-fifth and Nicholas Streets, Philadelphia, falls. Three men injured.

Burning of the old Parliament Building at Quebec, Canada.

April 20. Two thousand houses are burned at Delhi, India.

April 21. Tornado passes through Dunlap, Io. Some lives lost.

April 22. A terrible cyclone passes through Louisiana, Mississippi, Alabama, Georgia, North and South Carolina, doing immense damage to life and property. Beauregard, Miss., totally destroyed; killed, thirty; seriously injured, fifty-nine; at Wesson, Miss., killed, twenty-one; injured, fifty; at Rockport, Miss., killed, ten; at Hohenlinden, Miss., killed, thirty; at Pine Bluffs, Miss., seventeen killed; at Aberdeen, Miss., three killed, twenty-five injured; at Albany, Ga., eight killed, twenty-five injured, and loss of life at other places in the track of the storm.

April 25. Destructive water-spout near Lenoir, N. C.

April 26. Arch-Street Opera-House, Philadelphia, is burned in the morning.

HYDRAULIC BRICK-MACHINES.

411 Olive St., St. Louis, Mo.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In answer to query on page 190, I would say that our machines are in operation at Cleveland, O., Memphis, Tenn., and Louisville, Ky. The "Ethan Rogers Press" is the only hydraulic brick-machine in the country and is owned and controlled by this company. Yours, HYDRAULIC PRESS BRICK CO.

BRICK HOUSES.

HENDERSON, KY., April 24, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — Can you give me the name and price of a good work on domestic architecture, one, for example, giving plans and specifications for houses in brick of about $6,000 first cost.

Yours truly, O. F. N.

[PERHAPS "Wooden and Brick Buildings" published in two volumes by W. T. Comstock, 6 Astor Place, New York, will serve your purpose. Price $12.00. — EDS. AMERICAN ARCHITECT.]

A VALUABLE BUILDING STONE. — The discovery of building stone at Albany, Oregon, upon which the action of neither heat, cold nor moisture has any bad effect, is one of the most important events that has ever occured in the State. The stone is called granite sandstone, very rich in silica, of a close, fine grain, highly crystallized, unlaminated, and of a fine brown color. It has been used in this locality for many years, for fireplaces, door and window sills and for monumental work. It has lately been put to some very severe tests with a view to using it for the building of the great union depot at Portland. It was brought to a white heat, and suddenly plunged into cold water, and came out as solid and firm as before it went into the furnace. — *Wood and Iron.*

NOTES AND CLIPPINGS.

Cremation in Japan. — The cause of cremation is making progress in Japan that may well startle as well as encourage the advocates of cremation in Western lands. It is said that the number of bodies disposed of in that way is about 9,000 a year. The furnace is a stone and cement structure, with a tall chimney that makes it look like a factory. In the vestibule are a number of red earthenware urns and small shovels which the relatives of the deceased purchase to collect the ashes after burning. Besides the vestibule there are four chambers, the largest of which is decorated with granite columns. After the cremation the ashes are collected, placed in an urn, and then buried—often with much pomp—in a cemetery. The building is hedged in by fences of bamboo-canes and red camellias. — *New York Times.*

A Slickens-Ruined Farmer. — Less than a mile above the city (Sacramento) the American River empties into the Sacramento, and immediately beyond that point the scene becomes interesting. One picture we had on the point made by the junction of the rivers was characteristic of the country. On the bank near the extreme end of the point, in leather-colored clothing, a ragged slouch hat, gray-haired and gray-bearded, supporting himself on a heavy stick, distinctly outlined against a gray sky, stood a slickens-ruined farmer. He stood on a bank of slickens, part of many acres of slickens-topped land now growing only dense forests of young cottonwood, fall gray-green, where once ripening grain and fruit repaid his toil. Unlike most of his kind, he had not deserted his acres when they became worthless. Too old to attempt a fresh start in life, too bankrupt to afford to even desert the bare subsistence he could force from one or two feebly-living acres on the old place, too discouraged to hope, too crushed to even complain, he remained, growing withered and useless and gray with the land beneath him. As we rowed past he stood there motionless, perfectly in accord with every other element of the picture — all sombre, all sad. — *San Francisco Call.*

Measures against Scaffold Accidents. — New and special instructions have just been issued by the Paris Prefect of Police, so as to reduce the too frequent occurrence of accidents in the building of houses, etc. The local chiefs of the police are ordered to visit every scaffold in their district before work is begun. Suspended scaffolding is to be maintained by three, instead of only one rope, and cloths must be so arranged as to prevent dust or fragments from falling into the street. In the event of any workman or pedestrian being wounded, the building contractors are to be at once prosecuted before the police or correctional tribunals. Since Zola depicted the fall of Coupeau from the house-top, and since the reproduction of this scene of *L'assommoir* on the stage, the public have manifested special concern respecting accidents of this nature. It has even been suggested that masons should be protected in the same manner as acrobats, who perform on the trapèze. A net, it is urged, must be placed round buildings in course of construction to catch the stray workmen who chance to fall off the scaffold! Such extreme solicitude may seem somewhat eccentric and exaggerated; but, among our neighbors, there is a serious question of rendering this precaution compulsory. — *The Builder.*

The King of Bavaria's New Palace. — King Louis II of Bavaria has recently returned to Munich, after having passed the last four months at his new country seat, Neuschwanenstein (New Swan's Stone). This is the newest and most magnificent of his numerous castles, and in point of size may be ranked with the most celebrated palaces on the Continent. Neuschwanenstein stands on the isolated Tegelrock, opposite to the well-known Hohenschwangau, and two drawbridges connect it with the carriage roads on either side. The castle has a height of six stories, with rich decorative architecture in pure Italian style, and numerous balconies and corner-turrets, all in solid granite. In the middle a great watch-tower rises to 360 feet in height, with two verandas near the top, from which a grand view of the Bavarian Highlands may be enjoyed. The roof of the palace is covered with copper, crossed diagonally by gilded plates. An enormous court leads to the majestic portal, which is a marvel of the stone-cutter's art. The front of the right wing of the castle is decorated with two fresco-paintings, forty feet high, one of which represents St. George fighting the dragon, and the other the Virgin Mary with the Child, as the protectress of Bavaria. The pediment of this wing bears a bronze herald in ancient armor, holding the Bavarian standard, while the left side is protected by a bronze Bavarian lion. The interior of this royal residence is highly decorated by innumerable statues and double columns in the style of a Genoese palace, and the splendor of the state rooms can hardly be described. The ceilings are overloaded with decorative stucco-work, while the walls are embellished with fresco-paintings by the first Munich artists. The subjects of these paintings are taken from the history of the Bavarian Kings from 1806 to 1867, from episodes of the Franco-German war of 1870-71, in which Bavarian troops took part, and also from the last music-dramas of Richard Wagner, the "Ring of the Nibelung" and "Parsifal." The floors of the halls are either of mosaic work or of various woods in harmonious patterns. The King's apartments are on the sixth story, which, besides his study, private library, and bedchamber, only include an audience-chamber for receiving the Ministerial reports. The royal study is decorated with the marble bust of the King's parent, of Richard Wagner, Gen. von der Tann, Herr von Lutz, and Augustus Heigl, the royal private secretary, besides a painting representing a scene from Wagner's "Rhinegold." It was in this chamber that King Louis received the news of the sudden death of his friend Wagner three weeks ago. The fourth and fifth stories contain the large halls, destined for the extensive library, and the collections of arms and coins. The ground floor includes a grand staircase with gold decorations. The entire castle is illuminated by electrical lamps — Jablochkoff candles in the courts, and Swan and Edison lamps in the interior. Even the royal stables are decorated with fresco-paintings, which represent prehistoric scenes. — *Berlin Letter to the London Daily News.*

Draughtswomen in England. — The system of employing draughtswomen in the drawing-office, which has been successfully introduced in several large establishments on the Clyde and in one or two other places, has now been adopted in the extensive engineering works of Messrs. Clarke, Chapman & Gurney at Gateshead. Some twelve months ago this firm determined to make the experiment and went to the expense of erecting a special building, so as to give the ladies accommodation quite separate and apart from that of the ordinary draughtsmen. The new office is roomy, well ventilated and decorated with flowers during the summer months, and is approached by a door so placed that the draughtswomen need never meet or even see the other employees of the firm. Up to the present time five ladies have had occupation, chiefly in tracing plans of steam winches, boilers, etc., for the shops, and in finishing off drawings of machinery prepared by the draughtsmen. The office hours are from 8.45 to 11.45 in the morning, and from 1.15 to 4.45 in the afternoon. So satisfied have the firm been with the result of the experiment that they are now making arrangements for the introduction of lady clerks in the execution of the ordinary commercial work of the office, and as soon as the necessary structural alterations to the buildings have been made some fifteen extra hands will be taken on. All the clerks will be required to have a knowledge of shorthand, for, in addition to their usual book-keeping, their duties will consist in writing business letters from dictation and in taking down messages from the telephone. No difficulty was found in obtaining a good number of candidates for the situations, and though the pay was at first small, so apt have the ladies been in acquiring a knowledge of their business that most of them are now earning fairly good salaries. Messrs. Swan & Hunter, ship-builders on the Tyne, are also making arrangements for the employment of female clerks. — *London Engineer.*

Houses for Artisans in Paris. — High rents have long been the grievance of Parisian artisans and the Prefect of the Seine, recognizing the justice of the complaint, has turned his attention to the matter with a view of finding a remedy for the evil. A committee has been appointed to study the question and pronounce upon the respective merits of the different solutions proposed for it. A project drawn up by M. Lalanne appears likely to be taken into serious consideration. He suggests that the city of Paris should borrow a sum of 16,000,000*f.* from the Crédit Foncier at four per cent interest. This sum would be laid out in the purchase of eight plots of ground situated within the fortifications, but outside the exterior boulevards, and in the building of eight large houses or *cités* for working men, each plot of ground and each house to cost 1,000,000*f.* respectively. The rent of lodgings in these blocks or buildings would be fixed at 120*f.* per year at the minimum and 350*f.* at the maximum. In order to facilitate communication with the place of employment a line of tramways will be opened, by means of which for 5 sous, artisans could be conveyed to the centre of Paris in the morning and taken home in the evening. The workingmen's buildings would as a matter of course, be provided with all the appliances conducive to health and cleanliness, and instead of their living, as at present, huddled up with their families in a wretched attic, lacking both light and air, they would be relatively roomily lodged at a lower rent than they pay in the city streets. The advantages to the working classes would certainly be great were this or any similar project carried out, and the sooner it is done the better for those on whose behalf the Prefect of the Seine is bestirring himself. — *London Standard.*

Straw Lumber. — The other day we had occasion to investigate pretty thoroughly the character, properties and uses for straw lumber. As some of our readers know, this is an article manufactured at the West, and turned out in boards or sheets 33 inches in width by 12 feet in length, and of various thicknesses. It is heavier than black-walnut, has no grain, is of the color of straw-board, though considerably darker, and is much stronger and stiffer than ordinary timber. Though made in considerable quantities at the present time, the supply seems hardly equal to the demand. There are advantages in this material which in the near future will probably make it of the highest value, not only for carpenters and architects, but for the car-builder, and, in fact, for mechanics generally. Its toughness, the firmness with which it holds nails and screws, the ease with which it can be cut, and the fact that it can be bent by the aid of heat, shaped in dies, and is not liable to shrink or warp, and is little affected by water, even when unprotected, makes the range of its probable uses extraordinarily great. It seems to be a non-conductor of heat and electricity. It can be rolled up into pipes of great strength and light weight, and is available for a range of uses for panelling purposes for which we have no equivalent. — *The Iron Age.*

Roofing-Linen. — According to the *Deutsche Bauzeitung*, a new covering material called "roofing-linen" has been introduced, which is about half the thickness of good *carton-pierre*, and consists of a layer of coarse linen which lies between two layers of thin roll-paper. The cohesion of the three layers is effected by an asphalte composition of special make, called "roofing-paint." It is stated that this paint should be freely applied to roofs immediately after their completion, and again about six weeks afterwards. This operation should, it would seem, be repeated every few years. The linen costs about 10*d.* to 11*d.* per square yard, and the paint 10*s.* to 11*s.* per cwt. Although this new method appears to have points which deserve commendation, a real estimate of its value cannot be formed until the material has been exposed to the test of several years' use.

The Capitol at Albany, N. Y. — Messrs. Eidlitz & Richardson, architects of the new capitol, report the amount required for the completion of the building according to their plans, $4,730,944. Among the items are $570,000 for the grand staircases, $20,000 for stained glass, $120,000 for bas-reliefs, $800,000 for porches, $75,000 for carving, $720,000 for the main tower and $1,200,000 for the terrace. The amount expended up to January 1, 1883, according to Gov. Cleveland's message, was $14,222,993.09. The total cost of the structure, if estimates are accurate, will be $18,953,937.09.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

276,217. SEWER-GAS TRAP. — Ambrose Blatchly, San Francisco, Cal.

276,219. WINDOW-FRAME. — William Boisen, Luzerne, Iowa.

276,228. BRICK-MACHINE. — Israel Cullen, Pittsburgh, Pa.

276,241. PORTABLE HANGING SCAFFOLD. — John H. Hanavan, San Francisco, Cal.

276,247. MALLET. — Solon G. Howe, Detroit, Mich.

276,255. DOOR-LATCH. — Philip Mathes, Idlewood, Pa.

276,261. URINAL. — James McGinley, Chicago, Ill.

276,293. LIME-WASH FOR COATING BUILDINGS, ETC. — Joel H. Sharpless, Kennett Square, Pa.

276,325. SLIDING DOOR-PULL. — William H. Andrews, New Haven, Conn.

276,332. ELEVATOR. — Cyrus W. Baldwin, Chicago, Ill.

276,333. DOOR-LATCH. — Judson A. Baldwin, Shelburne, Vt.

276,342. DOOR-LATCH. — Samuel W. Billingsley, Woodberry, Md.

276,357. DEODORIZING AND DISINFECTING WATER-CLOSETS, ETC. — Edward Z. Collings, Camden, N. J.

276,363. FIRE-ESCAPE. — David Crowley, Washington, D. C.

276,386. FUME-ARRESTER FOR CHIMNEY-FLUES. — Max Freudenberg, Ems, Germany.

276,396. ELEVATOR. — William F. Hall and Philip G. Hubert, New York, N. Y.

276,409. SASH-HOLDER. — Numon N. Horton, Kansas City, Mo.

276,412. SHINGLE-MACHINE. — Pleasant R. Houpe, Oak Forest, N. C.

276,416. WINDOW-SASH. — Benj. Hurtubes, Rahway, N. J.

276,423. CHIMNEY-PROTECTOR. — John G. Keller, Monticello, Ill.

276,436. FLOAT FOR WATER-CLOSET VALVES. — Henry S. Lord and Robert E. Day, Hartford, Conn.

276,468. FIRE-ESCAPE. — Wesley Rees, Memphis, Mo.

276,470. DISINFECTING APPARATUS FOR WATER-CLOSETS. — Charles S. Rice, Jr., Chicago, Ill.

276,476. BORING AND TENONING MACHINE. — William H. Ryan, Belton, Tex.

276,481. WATER-ELEVATOR. — William M. Scott, Lockport, N. Y.

276,491. ELEVATOR. — Chas. Lievens Soyez, Brussels, Belgium.

276,499. METHOD OF TREATING LUMBER. — Ephraim J. Story, Washington, D. C.

276,597. LOCKING-LATCH. — George H. Van Winkle, Hornellsville, N. Y.

276,509. SASH-WEIGHT. — Reuben Vosburgh, Oregon, Ill.

276,511. SPIKE. — Abram Wakeman, Jr., New York, N. Y.

276,540. HINGE. — Thos. L. Rivers, Mount Vernon, Ill.

276,541. WIRE NAIL. — William D. Sloan, Brooklyn, N. Y.

276,544. BRICK AND TILE MACHINE. — Garrett Van Winkle, Avon, Ill.

SUMMARY OF THE WEEK.

Baltimore.

DWELLINGS. — A. L. Gorter, Esq., is about to have built 9 four-st'y houses, cor. Maryland Ave. and Preston St., brick, stone and terra-cotta, 16′ 8″ x 58′ 2″, from designs by Chas. E. Cassell, architect; Wm. McMullen, builder.

APARTMENT-HOUSE. — The same architect has prepared plans for the erection of a four-st'y store and apartment-house, cor. Charles St. and Boundary Ave., brick and stone, 25′ x 85′, and to cost $19,000; Geo. A. Blake, builder.

Mr. Chas. L. Carson, architect, has prepared drawings for the erection of the following buildings: —

BANK-BUILDING. — Commercial & Farmers' Bank, cor. Howard and German Sts., two-st'y brick, with stone trimmings, 38′ x 75′; cost, $25,000; Wm. Ferguson & Bro., builders.

STORE. — Three-st'y store, for Jos. H. Rieman, Esq., Eutaw St., near Lexington St., brick, with stone finish, 19′ x 74′; cost, $10,000; Wm. Ferguson & Bro., builders.

WAREHOUSE. — Five-st'y warehouse, for Wm. F. Primrose, Esq., Clay St., near Howard St., brick, with stone trimmings, 36′ x 65′; cost, $10,000; Wm. Ferguson & Bro., builders.

BUILDING PERMITS. — Since our last report twenty-four permits have been granted, the more important of which are the following: —

Geo. Kahl, two-st'y brick building, w s Sharp St., between Stockholm and Ostend Sts.

Christian W. Keidel, 6 two-st'y brick buildings, w s Charles St., between Fort Ave. and Randall St.

John M. Getz, 5 three-st'y brick buildings, n e cor. Chase St. and Getz Ave.

John Codori, 2 three-st'y brick buildings, e s Greenmount Ave., between Madison and Eager Sts.

D. H. Rice, three-st'y brick building, with stable, and stable in rear, adjoining, s s Mechanics' Court, between Hillen and Gay Sts.

Emil Wagner, three-st'y brick building, e s Harrison St., between Fayette and Gay Sts.

W. W. Lindsey, three-st'y brick building and two-st'y brick stable in rear, s w cor. Gilmor and Franklin Sts.

J. H. Carter, 3 three-st'y brick buildings, n s Lafayette Ave., w of Carey St.

People's Bank, four-st'y brick building, with basement, s w cor. Sharp and Lombard Sts.

Boston.

BUILDING PERMITS. — *Brick. — Circuit St., No.* 54, for J. J. Williams, parochial residence, 27′ and 42′ x 62′, two-st'y mansard.

Marlborough St., No. 253, Ward 11, for James F. Curtis, dwell., 28′ 10″ x 65′, four-st'y flat; James Smith, builder.

Tremont St., No. 441, cor. Appleton St., Ward 16, for G. T. Bailey, stable, offices, etc., 17′ and 42′ x 30′, three-st'y flat; Weston & Shepard, builders.

Richmond St., No. 95, rear of Langdon Pl., Ward 6, for Daniel Goodnow, stable, 54′ and 92′ x 97′ 3″ and 136′, two-st'y flat; John Kelley, builder.

Wood. — H St., No. 100, Ward 14, for Jacob P. Powers, dwell., 24′ x 34′, two-st'y mansard; Jacob P. Powers, builder.

Sheldon St., cor. Ashland St., Ward 23, for Geo. B. Litchfield, dwell., 20′ and 27′ x 30′ and 17′ x 19′, two-st'y pitch; Alexander Rogers, builder.

Shirley St., No. 38, Ward 26, for Wm. Donaldson, dwell., 20′ and 22′ x 28′, and 14′ x 16′, two-st'y pitch; Wm. Donaldson, builder.

Tremont St., cor. Whitney Pl., Ward 22, for Dennis Daley, dwell., 23′ x 39′, three-st'y pitch; McDonald & Tobin, builders.

Roslin Ave., near Washington St., Ward 23, for J. C. Becker, poultry-house, 8′ x 124′ and 8′ x 100′, one-st'y pitch; W. G. Becker, builder.

Paris St., No. 107, Ward 2, for John W. Kimball, storehouse, 23′ x 86′, one-st'y flat.

Adams St., near Mills St., Ward 24, for Joseph W. Hildreth, dwell., 22′ and 28′ x 30′, two-st'y pitch; Jos. W. Hildreth, builder.

Walnut Ave., cor. Cobden St., Ward 21, for Leonard Ware, Jr., dwell., 42′ x 42′ and 10′ x 30′, two-st'y pitch.

Rutherford Ave., near Dunstable St., Ward 5, for Beals & Bartlett, stable, 26′ 6″ and 39′ 9″ x 62′, three-st'y flat; Geo. W. Brown, builder.

Parker St., Nos. 717 *and* 719, Ward 22, for Wm. Goldsmith, 2 dwells., 20′ and 26′ x 45′, three-st'y flat; Samuel Rantin, builder.

Farrington Ave., Ward 25, for Jesse Tirrell, 4 dwells., 20′ x 32′ and 14′ x 28′, two-st'y pitch; H. M. Perry, builder.

Alden Ct., off Green St., Ward 23, for Mary McMorrow, dwell., 20′ x 30′ and 15′ x 20′, two-st'y pitch; Melvin D. Ayers, builder.

Centre St., rear, near May St., Ward 23, for E. R. Butler, stable, 30′ and 36′ x 45′ 6″, one-st'y pitch; Wm. Smith, builder.

Pearl St., No. 23, Ward 3, for John H. Tomfahrde, dwell., 23′ x 52′, three-st'y flat; J. B. Maynard, builder.

Brooklyn.

BANK. — The Trustees of the Dime Savings Bank have selected Mercein Thomas architect of their new building; not T. T. Thomas, of New York, as stated.

BUILDING PERMITS. — *Sixth St., No.* 242, e s, 22′ n North Fifth St., four-st'y frame double tenement, tin roof; cost, $6,000; owners, W. L. & A. M. C. Meyer, on premises; architect, T. Engelhardt; builder, Jacob Schoch.

Maujer St., Nos. 180 *and* 182, s s, 80′ w Humboldt St., three-st'y frame double tenement, tin roof; cost, total, $7,500; owner, Daniel Hutzelmann, 172 Maujer St.; architect, T. Engelhardt.

Nassau Ave., s e cor. Lorimer St., 2 three-st'y frame stores and tenements, gravel roofs; cost, $2,500 and $3,500; owners, corner building, — Hendrickson, Lorimer St., inside building, Randall & Miller, 126 Manhattan Ave.; builders, Randall & Miller.

Vanderbilt Ave., e s, 219′ s De Kalb Ave., two-st'y brick stable; cost, $3,850; owner, E. H. Barnes, 222 Cumberland St.; builders, J. M. Brown and J. S. McKea.

Union St., n s, 92′ w Sixth Ave., 3 four-st'y brick double flats, tin roofs; cost, each, $12,000; owner, architect and builder, Thos. Green, 195 Sixth Ave.

Bedford Ave., n w cor. Hayward St., also, *Rutledge St.*, s w cor. Bedford Ave., 2 three-st'y brownstone front stores and tenements, tin roofs; cost, total, $16,000; owner and builder, Richard Healey, Hewes St., near Wythe Ave.; architect, I. D. Reynolds.

Bedford Ave., w s, between Hayward and Rutledge Sts., 8 two-st'y brownstone front dwells., tin roofs; cost, total, $40,000; owner, etc., same as last.

Belvedere St., e s, 100′ n Broadway, two-st'y frame dwell, tin roof; cost, $4,000; owner, A. Deitrich, 535 Grand Ave.; architect and builder, C. L. Johnson; masons, G. Lehrian & Sons.

Clifton Pl., No. 201, about 150′ n w Bedford Ave., two-st'y frame stable and dwell., gravel roof; cost, $2,800; owner, W. B. Matson, 389 Greene Ave.; builders, Morris & Selover.

Adams St., e s, 125′ s Myrtle Ave., four-st'y brick factory, tin roof; cost, $9,000; owner, Jas. Howell, Adams St.; architect, W. A. Mundell; builders, M. J. Reynolds and Morris & Selover.

Bedford Ave., e s, 51′ n Jefferson St., three-st'y brick stable, tin roof; cost, $7,000; owner, F. J. Washburn, 708 Bedford Ave.; architect and builder, W. H. Burhaus; mason, C. King.

Putnam Ave., Nos. 295 *to* 301, 100′ e Nostrand Ave., 2 four-st'y brick double flats, gravel roofs; cost, each, $15,000; owner and builder, T. W. Swimm, Bates Ave.; architect, Amzi Hill.

Eighteenth St., No. 206, 300′ w Fifth Ave., two-st'y and basement brick dwell., tin roof; cost, $4,000; owner, Jas. Woodhead; architect, A. V. B. Bush.

Clinton Ave., e s, 143′ s Myrtle Ave., three-st'y and attic brick dwell.; cost, $18,000; owner, Chas. Dingee, 236 Washington Ave.; architect, C. Werner; builders, J. D. Anderson and Martin & Lee.

Portland Ave., w s, 225′ n Lafayette Ave., 2 three-st'y brownstone front dwells., tin roofs; cost, each, $12,000; owners, Litchfield & Dickinson, 214 State St.; architect, C. Werner; masons, J. De Mott & Son.

Water St., s s, 219′ w Main St., one-st'y brick foundry; also, four-st'y brick shop, gravel roofs; cost, total, $10,000; owner, Jas. Mitchell, Water St., near Fulton Ferry; architect and builder, F. D. Norris; mason, Thos. Donlon.

Flushing Ave., n s, 40′ w Bogert St.; three-st'y frame double tenement, tin roof; cost, $4,000; owner, Roswell C. Williams; architect, C. Werner; builder, Jacob Schoch.

Middleton St., s s, 160′ e Harrison Ave., 4 three-st'y frame double tenements, tin roofs; cost, each, $4,500; owner, B. Bosert, Harrison Ave.; architect, J. Platte; builders, J. Ance and F. Hertz.

Sterling Pl., n s, 235′ 5″ w Seventh Ave., three-st'y brick stable, tin roof; cost, $21,500; owner, Norman L. Munro, 57 Seventh Ave.; architect, A. Stringham; builders, H. D. & W. A. Southard.

Seventh Ave., w s, 30′ 6″ s Carroll St., 3 four-st'y brownstone front tenements, gravel roofs; cost, each, $6,000; owner, W. G. Brown, 728 Fulton St.

Chicago.

DWELLINGS. — L. G. Hallberg has completed plans for Mr. J. Foster Rhodes for a house on Rhodes Ave., cor. Thirty-second St., 50′ x 55′, of limestone and brick.

Mr. J. Van Osdel has plans ready for a dwelling for Mr. Samuel Baker, to be built at Ellis Ave., cor. Fortieth St., Queen Anne style; to cost $13,000.

Burling & Whitehouse are architects for three dwells. on La Salle Ave. for Mr. Kirkwood, brick and terra-cotta; cost, $30,000.

Dixon & Townsend are building for Mr. L. W. Pitcher a house on Prairie Ave., of pressed-brick and stone; to cost $12,000.

FACTORY. — Edbrooke & Burnham have planned the addition to Kirk's factory in the North Division. The expense will be $40,000. The building will then be 60′ x 125′, five stories and basement.

FLATS. — B. W. S. Clark has plans ready for flats to be built for J. J. Shutterly, on Park Ave., to cost $10,000.

The same architect has prepared plans for flats on Western Ave., to cost $10,000.

Architect W. L. Carroll has planned a two-st'y building for flats, pressed-brick, with stone finish, for Mr. Thomas Pond, on May Street.

Plans are completed by F. W. Ruehl, architect, for a three-st'y building for flats on West Taylor St.; cost, $7,500.

The same architect has plans ready for flats to be built on Ewing St., for J. A. Craig, to cost $8,000.

Also a three-st'y building for flats, 50′ x 75′, for C. Rosulek, to cost $15,000.

OFFICES. — Ground has been broken at corner of Michigan Ave. and Adams St. for a large office-building for the Pullman Palace Car Company. The front on Michigan Ave. will be 125′, and 170′ on Adams St., to cost $500,000.

W. L. B. Jenney has had charge of remodelling the Tobey Building, cor. of State and Jackson Sts., into an office-building, at a cost of $80,000.

WAREHOUSES. — Mr. H. Siercks has drawn plans for the warehouse to be built, corner of Michigan and Lasalle Sts., for Mr. W. C. Lobenstein. It is to be four stories and basement.

Mr. David Wiley will soon build a large fire-proof warehouse on the cor. of Clark and Twelfth Sts.

BUILDING PERMITS.—H. H. Garstens, three-st'y basement brick tenement, 38′ x 80′, 61 Hubbard St.; cost, $10,000.

F. Kaersten, two-st'y brick dwell., 22′ x 62′, 242 Vine St.; cost, $3,200.

A. Kirkwood, 2 three-st'y basement brick dwells., 38′ x 62′, 336 and 338 Lasalle Ave.; cost, $6,500.

Chas. Schwarze, two-st'y and basement store and dwell., 21′ x 60′, 345 North Ave.; cost, $3,500.

John Kollassa, two-st'y basement and attic brick dwell., 21′ x 56′, 30 Bradley St.; cost, $3,600.

Morley & Ramsdell, 2 two-st'y brick dwells., 40′ x 58′, 1000 and $1002 Adams St.; cost, $8,000.

A. Crane, 4 brick cottages, each 20′ x 38′, Emerald St.; cost, $4,000.

Board of Education, three-st'y basement brick school-house, 86′ x 117′, Wentworth St., cor. Thirty-third St.; cost, $70,000.

James Buehan, two-st'y brick dwell., 44′ x 45′, 703 West Chicago Ave.; cost, $4,500.

M. Buckley, brick livery stable, 34′ x 100′, 215 Robey St.; cost, $6,000.

Joseph Kral, three-st'y brick store and dwell., 24′ x 60′, 423 Eighteenth St.; cost, $4,700.

J. Anderson, two-st'y brick store and dwell., 24′ x 60′, 160 Centre St.; cost, $5,000.

Chas. Breytspraak, two-st'y brick flats, 22′ x 46′, 92 Wendell St.; cost, $4,400.

W. Troost, two-st'y brick dwell., 32′ x 70′, 419 Dearborn Ave.; cost, $20,000.

B. Stowell, two-st'y brick dwell., 20′ x 50′, 459 Dayton St.; cost, $4,300.

E. Sweenie, two-st'y basement brick flats, 22′ x 50′, 453 Taylor St.; cost, $3,000.

J. N. Gage, 8 two-st'y brick dwells., 66′ x 132′, Adams St., w of Oakley St.; cost, $24,000.

Mrs. F. A. Huber, two-st'y brick dwell., 24′ x 60′, 721 Larrabee St.; cost, $7,000.

L. A. Watson, brick basement, 34′ x 100′, Depuyster St.; cost, $3,500.

H. R. Wilson, two-st'y brick dwell., 21′ x 37′, 629 Monroe St.; cost, $3,000.

Chas. H. Clingman, two-st'y brick dwell., 24′ x 39′; cost, $5,000.

Wm. Gregory, two-st'y basement brick flats, 22′ x 38′, 21 Wilson St.; cost, $3,500.

H. Giselbracht, 5 two-st'y basement and attic brick dwells., 174–182 Lasalle Ave.; cost, $15,000.

Jno. Edwards, two-st'y brick dwell., 24′ x 60′, Wabash Ave., near Thirty-fourth St.; cost, $7,000.

M. Burback, three-st'y brick flats, 22′ x 45′; cost, $4,000.

F. Gabarek, two-st'y brick flats, 21′ x 56′, 739 Loomis St.; cost, $4,000.

Thos. Fauland, two-st'y brick dwell., 22′ x 59′, 274 Loomis St.; cost, $4,000.

Mrs. F. Griffin, three-st'y basement brick store and dwells., 26′ x 50′, 879 North Clark St.; cost, $8,000.

Conrad Gehrke, three-st'y basement and attic brick flats, 22′ x 69′, 179 East Huron St.; cost, $6,000.

Jno. Polka, two-st'y basement brick flats, 21′ x 56′, 600 Throop St.; cost, $3,000.

H. Filgrim, two-st'y basement brick dwell., 21′ x 50′, 637 Harrison St.; cost, $3,500.

C. Kaun, two-st'y basement and attic brick store and flats, 24′ x 64′, 2604 Wentworth St.; cost, $3,500.

Mrs. M. Griffith, 2 two-st'y basement brick dwells., 33′ x 70′, 973 and 975 Adams St.; cost, $5,000.

Chas. Cohagen, three-st'y basement brick store and flats, 25′ x 82′, n e cor. North Ave. and Dayton St.; cost, $10,000.

O. H. Roche, two-st'y brick barn, 40′ x 46′, 2442 Michigan Boulevard; cost, $3,500.

Mrs. Anne Davis, two-st'y basement brick dwell., 26′ x 38′, Vernon Ave.; cost, $4,000.

B. Wolf, two-st'y basement brick dwell., 24′ x 76′, 3448 Wabash Ave.; cost, $8,000.

Anson Stager, brick additional story, 26′ x 92′, 1737 Michigan Ave.; cost, $15,000.

J. S. Kirk, five-st'y basement brick factory, 60′ x 90′, North Water St.; cost, $25,000.

C. W. Marks, brick additional story, 27′ x 91′, 6 East Washington St.; cost, $4,000.

Wm. Scott, 2 two-st'y brick dwells., 33′ x 48′, 851-859 Adams St.; cost, $5,600.

Cincinnati.

Building Permits.—Jas. L. Haven, three-st'y brick building, n s Commerce St., between Elm and Plum Sts.; cost, $3,400.

Jas. Blackard, two-st'y brick building, e s Gilbert Ave., between Locust and Kemper Sts.; cost, $3,000.

Ed. Bice, two-st'y brick building, n e cor. June and Reading Sts.; cost, $2,000.

Miss Ella Platt, two-st'y brick building, York St.; cost, $3,500.

John C. Thoms, repair two-st'y brick building, w s Central Ave., between Fourth and Fifth, known as Thoms's Hall; cost, $15,000.

E. Gurney, three-st'y frame building, Browne St.; cost, $4,500.

John J. Pfeffer, three-st'y brick building, cor. Harriet and Gest Sts.; cost, $7,000.

Repairs; cost, $3,375.

Jersey City, N. J.

Building Permits.—T. Garvin, frame building, 20′ x 36′.

W. P. Vreeland & Co., frame building, 5′ x 20′.

J. E. Hewett, frame extension, 20′ x 30′.

Wm. Winberry, 59 Newark Ave., to raise building 10 feet, when completed not to exceed 22 feet high.

Domestic Spring Bed Co., Railroad Ave., frame building, 50′ x 50′.

P. Obergfell, No. 157 Ninth St., frame building, 25′ x 50′.

Stewart Carpet Cleaning Works, Nos. 88 and 90 Erie St., frame building, 27′ 6″ x 58′.

E. C. Dickinson, 88 Montgomery St., extension, 25′ x 49′, 22′ high.

New York.

Apartment-Houses.—For Mr. Thos. Osborne a ten-st'y fire-proof apartment-house, 100′ x 150′, is to be built on the n w cor. of Fifty-seventh St. and Seventh Ave., from designs of Mr. Jas. E. Ware. The front is to be of stone, and the cost about $550,000.

For Mr. R. T. Auchmutz a four-st'y apartment-house, 50′ 3″ x 100′, is to be built on the s w cor. of Second Ave. and Sixty-eighth St., from designs of Mr. Geo. B. Post.

Bank-Building.—The Building Committee of the Mercantile Bank & Manhattan Co., have accepted the plans of Mr. W. Wheeler Smith for the building they are to jointly erect at Nos. 40 and 42 Wall St.

Cable Office.—The plans of Mr. Henry J. Hardenbergh have been accepted by the Western Union Telegraph Co., for their cable-office on Broad St. The Company have also called for competitive plans for the new building which they have decided to build on the s w cor. of Fifth Ave. and Twenty-third St.

Contract.—John I. Tucker has the contract for building the Mercantile and Mechanic Bank Building.

Cotton Exchange.—Mr. George B. Post's designs for the Cotton Exchange Building have been accepted.

Flats.—A block of flats with stores below is to be built on Broadway, corner of One Hundred and Thirtieth St., from designs of Mr. I. F. Burrows. They are to be 25′ x 84′ each, four stories high, brick and terra-cotta, and will cost about $50,000.

Houses.—On the east side of Madison Ave., between Fiftieth and Fifty-first Sts., two houses, 30′ x 70′ each, four stories high, are to be built from designs of Mr. A. B. Jones, one for Mr. T. F. Oakes, the other for Mr. A. H. Holmes. They will have brownstone fronts.

Removals.—The Mechanics' and Traders' Exchange have moved their rooms to No. 14 Vesey St.

May 1 caused quite an exodus of architects from "down-town" to "up-town" quarters.

Store.—Messrs. Arnold, Constable & Co. propose to enlarge their present store by building in the rear of their premises running through from Eighteenth to Nineteenth St.

Church.—Grace Church is to have a new stone steeple and improvements made at a cost of $50,000.

Building Permits.—*West Forty-eighth St., Nos.* 418, 420, 422, 424, *and* 426, 5 five-st'y brick tenements, tin roofs; cost, each, $15,000; owner, John Foutham, 258 West Forty-seventh St; architect, Wm. E. Bishop.

Courtland Ave., e s, 28′ 3″ n One Hundred and Forty-eighth St., three-st'y frame dwell. and store, tin roof; cost, $5,100; owner, Chas. Spillner, 534 Courtland Ave.; architect, Henry Piering.

East Twenty-second St., Nos. 312 *and* 314, five-st'y brick workshop, tin roof; cost, $12,000; owners, Samuel Bailey & Son, 211 East Twenty-second St.; architects, Youngs & Campbell.

Bedford St., Nos. 41 *and* 43, five-st'y brick and stone flat, tin roof; cost, $25,000; owner, Mary McManus, 231 East Seventy-ninth St.; architect, Louis Ungrich.

Third Ave., n w cor. Ninety-fifth St., 4 five-st'y brownstone front tenements and stores, tin roofs; cost, each, $12,000; owner and builder, John D. Karst, 2006 Second Ave.; architect, F. S. Barus.

Avenue A, s e cor. Fifty-seventh St., four-st'y brick tenement, tin roof; cost, $15,000; owners, Schmitt & Schwanenfleugel, 165 East Fifty-ninth St.; architects, A. Pfund & Son.

One Hundred and Fourteenth St., n s, 325′ e First Ave., 3 four-st'y brick tenements, tin roofs; cost, each, $8,000; owner, Margaret Schmitt, 428 East One Hundred and Twenty-second St.; architect, Geo. W. Walgrove; builder, Frank Schmitt.

One Hundred and Twenty-sixth St., s s, 330′ e Seventh Ave., three-st'y brownstone front dwell.; cost, $20,000; owner, Samuel O. Wright, 255 West One Hundred and Twenty-seventh St.; architects, Cleverdon & Putzel.

West Thirteenth St., No. 1, five-st'y brick tenement and store, tin roof; cost, $14,000; owner, F. W. Hurtt, 503 Fifth Ave.; architect, Wm. H. Hume.

Alterations.—*Rose St., No.* 18, repair damage by fire; cost, $4,750; owner, Thos. H. Crosley, 23 Rose St.; builders, Thos. Donlan and T. E. Smith.

East Eighty-seventh St., No. 118, three-st'y brick extension; cost, $3,000; owner, Wm. L. Becker, on premises; architect, John Brandt.

East Seventy-fifth St., No. 236, alterations and repairs; cost, $3,500; owner, Annie B. Taylor, Brooklyn; builder, Chas. M. Guilliaume.

Fourth Ave., s w cor. Sixty-third St., raise three stories; cost, $9,000; owner, estate of Wm. R. Stewart, Mary M. Stewart, extrx., 843 Fifth Ave.; architect, M. C. Merritt.

Hudson St., s e cor. Beach St., raise two stories and a six-st'y brick extension, tin roof; cost, $10,000; owner, Patrick Lenane, 323 West Fiftieth St.; architect, M. C. Merritt.

Chrystie St., No. 160, internal alterations; cost, $5,000; owner, City of New York; architect, D. J. Stagg.

West Twenty-eighth St., No. 116, two-st'y brick extension, front wall taken down and rebuilt; cost, $5,000; owner, D. Lydig Suydam, 40 East Thirty-first St.; architect, H. Edwards Ficken; builder, Frank Lyons, Jr.

Philadelphia.

Depot.—The Pennsylvania Railroad Co. are building a freight and immigrant depot, 92′ x 464′, on the old navy-yard property, and will be used by the Red Star Line Steamship Co.

Banking-Building.—Properties Nos. 311 and 313 Chestnut St. will undergo alterations for banking purposes, the National Bank of the Republic being the purchaser.

Building Permits.—*Tenth St.,* s w cor. Buttonwood St., three-st'y store and dwell., 23′ x 40′; Henry Kolp, contractor.

Wilder St., n s, e of Twentieth St., two-st'y dwell., 15′ x 38′; Jas. Smith, owner.

Fifteenth St., n e cor. Christian St., two-st'y church-building, 60′ x 91′; M. McConnell, contractor.

Tulip St., s e cor. Vienna St., 2 three and 2 two st'y dwells., 17′ x 51′ and 15′ x 32′; Jno. M. Buchanan.

Kimball St., s s, w of Twenty-first St., 6 two-st'y dwells., 14′ x 26′; Robert Kaighn, contractor.

Walter St., n s, w of Fifteenth St., three-st'y dwell., 15′ x 24′; Wm. R. Brady, owner.

Chatham St., n w s, s of Allegheny Ave., 3 two-st'y dwells., 14′ x 44′; Jas. Young, owner.

Baring St., n s, w of Thirty-third St., three-st'y dwell., 19′ x 52′; Geo. McNichol, contractor.

Fifth St., e s, n of Butler St., 2 two-st'y dwells., 16′ x 44′; Christian Joos, contractor.

Parker Ave., s s, w of Ridge Ave., 2 three-st'y dwells., 15′ x 32′; Amos Mattis, owner.

Moravian St., s s, rear No. 1429 Walnut St., three-st'y brick building, 18′ x 40′; Benj. Ketcham, contractor.

Spring Garden St., No. 3902, 4 three-st'y dwells., 15′ x 45′; J. R. Garber, contractor.

Columbia Ave., No. 2616, three-st'y dwell., 17′ x 50′; Jno. Klebe, contractor.

Wildey St., cor. Richmond St., four-st'y addition to factory, 35′ x 50′; Jas. Hood.

School St., n s, near Township Line, three-st'y dwell., 36′ x 69′; Geo. A. Sorber, contractor.

Pepper St., e of Sepviva St., 4 two-st'y dwells., 14′ x 33′; Thos. L. Kelly, owner.

Forty-eighth St., cor. Darby Road, third-st'y addition to "Home," 36′ x 87′; W. C. McPherson, contractor.

Longshore St., n w cor. Dithinan St., two-st'y school-house, 60′ x 100′; F. W. Tweed, contractor.

Peckin St., w s, w s cor. Freedland St., w of Shurs' Lane, 5 dwells., 16′ x 40′; Wm. H. Rainer, owner.

Jefferson St., n w s, n e of Fowler St., 3 three-st'y dwells., 16′ x 42′; Harry Rowland.

Oregon St., Nos. 4104, 4106 and 4108, 3 two-st'y dwells., 16′ x 43′; E. J. Lynch, contractor.

Filbert St., No. 1429, new front and three-st'y brick building, 18′ x 36′; W. T. Mead.

Wallace St., n s, w of Twenty-third St., 2 three-st'y dwells., 18′ x 52′; Cook & Furman.

Otis St., w s, s of Moyer St., three-st'y dwell., 20′ x 58′; Brown & Engles, contractors.

Orthodox St., n s, e of Asylum Road, three-st'y dwell., 20′ x 50′; E. S. Lewis, contractor.

Clinton St., w s, between Baker and Barr Sts., 2 three-st'y dwells., 16′ x 32′; McLaughlin & McNamara, contractors.

Mervine St., e s, s of Columbia Ave., three-st'y dwell., 16′ x 50′; C. C. Carman.

Penn St., No. 4727, third-st'y addition to dwell., 16′ x 32′; M. C. Chamberlin, contractor.

Emerald St., n w cor. Huntingdon St., 5 two-st'y dwells., with one store, 16′ x 44′; Dickson Bros., contractors.

Twenty-seventh St., s w cor. Fletcher St., 4 two-st'y dwells., 16′ x 27′; Samuel Stewart, contractor.

Thirty-seventh St., No. 15, three-st'y dwell., 16′ x 46′; Wm. Bunch, Jr.

North College Ave., No. 2507, three-st'y dwell., 15′ x 38′; J. Sims Wilson.

Clairborn St., w s, s of Norris St., two-st'y dwell., 14′ x 28′; Samuel Sabins, owner.

North Sixteenth St., No. 1523, three-st'y dwell., 21′ x 74′; H. M. Martin, contractor.

Nineteenth St., w s, s of Wharton St., 16 two-st'y dwells., 14′ x 40′; Patrick Fleming, owner.

Ridge Ave., w s, s of Leverington Ave., two-st'y dwell., 23′ x 46′; Jacob Shingle, owner.

Somerset St., s s, e of Almond St., two-st'y dwell. and two-st'y front building, 16′ x 40′; Chas. Judge, contractor.

Main St., n e cor. Mt. Pleasant St., one-st'y chapel, 60′ x 65′; Wm. Garvin, contractor.

Ripka St., n w s, n of Washington St., three-st'y dwell., 17′ x 32′; W. R. Davis, contractor.

Thirty-fourth St., e s, n of Powelton Ave., 3 three-st'y dwells., 20′ x 72′; W. H. Kimball, owner.

Adam St., n e cor. Cedar St., two-st'y store and dwell. and two-st'y dwell., 17′ x 45′; Jno. S. Baldt & Son.

Sixth St., w s, s of Moyamensing Ave., 6 two-st'y dwells., 18′ x 30′; W. J. Smith, contractor.

Virginia St., Nos. 2336 *and* 2338, 2 two-st'y dwells., 16′ x 28′; Francis Black, contractor.

Master St., s s, e of Mascher St., 2 three-st'y dwells., 16′ x 28′; E. Schmidt, contractor.

Wellington St., w s, n w of Kensington Ave., two-st'y dwell., 17′ x 28′; Daniel Regester, contractor.

Cumberland St., n s, between Eighth and Franklin Sts., 9 three-st'y dwells., 2 with stores, 15′ x 52′; C. H. Wisler, owner.

Leiper St., w s, n of Arratt St., two-st'y stable, 30′ x 42′; Wm. Keas, contractor.

Centre St., s s, e of Thirty-seventh St., 4 two-st'y dwells., 12′ x 30′; L. W. Goodman, contractor.

Allegheny Ave., s s, e of Whittie St., three-st'y boiler and engine house, 22′ x 30′; Samuel R. Stewart, contractor.

Capewell St., No. 1416, two-st'y dwell., 14′ x 28′; A. T. Richards, contractor.

Powelton Ave., cor. Thirty-ninth St., one-st'y hospital, 33′ x 144′; A. T. Richards, contractor.

Fifty-eighth St., cor. Darby Road, addition to hospital, 35′ x 72′; A. T. Richards, contractor.

Bowers St., No. 554, three-st'y dwell., 18′ x 30′; Shegog & Quigley, contractors.

Twenty-seventh St., s e cor. Oxford St., 3 two-st'y dwells., 15′ x 42′; Cotterell & Johnson, contractors.

Spring Garden St., n s, between Thirty-eighth and Thirty-ninth Sts., 3 three-st'y dwells., 16′ x 50′; Jno. Kelly, owner.

Pear St., n s, between Fifty-second and Fifty-third Sts., 2 two-st'y dwells., 16′ x 32′; Chas. Christine, contractor.

Thompson St., n e cor. Neff St., two-st'y school-building, 60′ x 97′; Chas. O'Neill, contractor.

Portland, Oregon.

Houses.—M. Owens is building a two-st'y house; cost, $3,000.

Capt. Bolles, a two-st'y house; cost, $5,000; Irving & Kept, contractors.

Dr. Jones, a residence; cost, $9,600; Mr. Angelo, contractor.

G. H. Williams, 3 dwells.; cost, $10,000.

J. Slavich, two-st'y residence; cost, $4,000.

Three double residences are being built for J. M. Kenworthy; cost, $12,000; E. M. Burton, architect.

S. Bluman is putting up a fine residence; cost, $10,000; R. Porter, contractor; W. H. Williams, architect.

Stores.—J. Morgan is putting up a two-st'y store, 50′ x 50′; cost, $6,000; J. Krumbein, architect.

C. A. Landenberger is putting up two stores; cost, $9,000; Irving & Kept, contractors; Krumbein, architect.

Mr. Opitz, three-st'y brick block; cost, $33,919; John Robertson, contractor; Joseph Sherwin, architect.

A. P. Hunting, 3 stores; cost, $4,009.

A. H. Johnson will build a business block, four-st'y, 100′ x 100′; cost, $100,000.

John Wilson, three-st'y brick store, 75′ x 100′; cost, $40,000; R. Porter, contractor; W. H. Williams, architect.

Church.—Scandinavian church; cost, $3,000; Peterson & Johnston, contractors.

Machine-Shop.—Heintz & Mason are building a machine-shop; cost, $7,000.

Toledo, O.

Contract.—Contract for the new "Hall Block" St. Clair St., cor. Jefferson St., has been awarded to A. Bentley; cost, about $70,000. Plans were made by Mr. Palmer, architect, of Chicago. The work will be under the supervision of E. O. Fallis, architect, of this city.

Hotel.—Addition to and remodelling "American Hotel, St. Clair St.; J. E. Morehouse, architect; John Groenwold, owner; John Arneman, contractor; cost, about $8,000.

Memorial Building.—Plans of Soldiers' Memorial Building are being prepared by Messrs. Gibbs & Stein. The site is on Ontario St., between Madison and Adams Sts.

Stores.—Excavation has been commenced for a three-st'y brick building, 50′ x 10-′, on Perry St., for Mr. E. D. Potter, Jr.; will cost when completed about $15,000; N. B. Bacon, architect; C. V. Cook is superintendent and builder.

Excavation is commenced for two-st'y brick and stone building, cor. of Adams and Summit Sts., for Mr. C. Bronson, 40′ x 114′; cost, about $15,000; L. B. Stevens, builder.

Store-building, Summit St., between Madison and Adams Sts., three-st'y, brick and stone, for Mr. Tracy, Sr., 40′ x 110′; N. B. Bacon, architect; A. Lombard, builder.

Store-building, 40′ x 108′, Summit St., between Adams and Oak Sts., brick and stone, three-st'y and basement; J. Hallet, owner; N. B. bacon, architect; plans being prepared.

House.—Two-st'y frame dwell. for Mr. George Brigham, Jefferson St.; cost, about $2,500; M. A. Stegenga, builder.

The American Architect and Building News

ADVERTISERS' TRADE SUPPLEMENT.

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FALSE ECONOMY.

There are many planes upon which the rich and poor must meet alike on equal terms, but until very recently they have not been placed upon an equal footing in the matter of decorating their homes, for the reason that those who must practice economy must be economical of their time, and cannot therefore look as closely into the merits of the article they use, as those who can well afford the time to give the subject the attention its importance warrants, and who after obtaining the desired information almost invariably purchase the best,—which in the nature of things is usually worth more nearly the price paid than the cheap article, which at best is only a temporary substitute. Especially is this true of paints — so many and so varied are the claims made by competing manufacturers who must sell their wares and who must sacrifice quality to meet the price of similar goods, that the user is at a loss how to determine which is the best for him to use, and finally, upon the principle that "paint is paint," or that as all are represented as being the best he might as well take that which costs the least money per gallon, he gets an inferior article, and straightway expends upon its application a sum two or three times as great as the cost of the material, and in a year or two, at most, finds he must paint again.

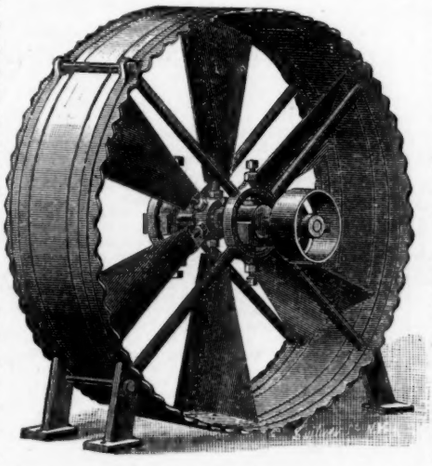
It is a well-known fact that the average cost of applying paint is from two to four times as much as the cost of the paint itself, and when this fact is taken into consideration it would seem folly to expend from $50 to $100 for labor in applying $25 or $30 worth of inferior paint which will never have a satisfactory appearance and after a year or so affords neither protection nor ornament; when the use of a strictly first-class paint which would cost twenty per cent, or say five or six dollars more, for sufficient to paint a small house, would insure a serviceable and always pleasing result for at least two or three times as long.

A cottage 20 by 45 feet, with veranda, will have a surface of about 3,500 square feet to be painted. This will require only sixteen or seventeen gallons of good paint to paint thoroughly, two coats. Many who have had an experience with cheap paints and who are deterred from keeping their houses well painted with handsome and enduring colors by the seemingly endless expense, will be glad to learn that the above statements and estimates can be safely relied upon. And we give as our authority the H. W. Johns Manufacturing Company of New York, who claim to be the most extensive manufacturers in the world of paints for structural purposes and who publish a pamphlet for free distribution which can be had by any one upon application, showing samples of the colors and shades they manufacture in various designs suitable for the decoration of all classes of buildings.

THE WING DISC FAN.

Thousands of manufacturers and others suffer constant inconvenience and discomfort, as well as positive pecuniary loss from the want of so simple a device as "Wing's Disc Fan or Exhauster."

This fan is adapted to the ventilation of churches, schools, hotels, mines, chemical-works, drying, machine, and boiler rooms, etc. It is useful in cotton and woolen mills, carpet-cleaning and similar establishments, where it is important to remove dust or floating particles of any kind. It is applied to buffers, lathes, polishing-wheels, etc., for gathering and depositing precious metals; in hotels and



restaurant kitchens, for the removal of smoke and odors — in fact, any one whose attention has not been specially directed to the subject will be surprised at the number and variety of its uses, as well as at the improvement in quantity and quality of the work done in a room after one of these fans has been running.

The fan requires very little power to drive it, and is noiseless. The blades are curved, and have an expanding pitch which increases its power and the amount of air moved. The entire area of the fan being active for the air to pass through, the current is much slower than in the usual forms of fans or blowers, and the unpleasant buzzing sound caused by air passing rapidly through small pipes or openings is avoided. When a rapid current is desired it can be obtained by reducing the sizes of the pipes. The arms are reversible, admitting a change in the direction of the current without changing the belt or pipes. All parts are made to a scale, so that if a part is broken it can be replaced at a trifling cost.

Its form and weight permit it to be placed at either end, or in the centre of a pipe, a wall, window or door, and to be run horizontally or perpendicularly, as circumstances may require.

These fans are made and sold by

THE SIMONDS M'F'G CO.,
50 Cliff St., New York.

THE YALE & TOWNE MANUFACTURING CO.

The stockholders of the corporation heretofore known as the Yale Lock Manufacturing Company, at their annual meeting held April 19th, 1883, voted to accept the authority given them by an act of the Legislature of Connecticut, to change the title of the corporation to the Yale & Towne Manufacturing Company, by which latter name it will hereafter be known.

The change is one of name only, and affects neither the property and franchises, nor the obligations of the company. It has been made desirable by reason of the greatly enlarged scope of the Company's business, in which the manufacture of locks is now only one of the several large departments, the tendency of the old name being to mislead customers as to the scope of the business and the facilities of the Company for its transaction.

During the past seven years the Company has gradually built up a large business in hoisting-machinery, including cranes of all kinds and of the largest sizes, and, during the past year, has also undertaken the manufacture of the Emery Testing-Machines. The production of work of this class involves the use of large and heavy machinery, and constitutes a branch of work entirely distinct from that included in the Company's lock and hardware department. Another department is being organized for the manufacture, under the patents of A. H. Emery, of scales of all kinds, and of pressure-gauges, the development of which will, in time, it is believed, make this department of at least equal importance with the older ones.

It will thus be seen that the business of the Company embraces not only the manufacturing operations contemplated under its original organization, but also several important lines of heavy engineering work. The buildings, machinery and appliances for the latter are already in great part provided and in operation, and the change of name above announced is chiefly to avoid the misunderstanding, as to the Company's business and facilities, which experience has shown to result from the limiting word "Lock," in the old title. The ownership and management of the company remain unchanged. The old name, in connection with the older products of the company, has long been synonymous with *good*

workmanship, and it is intended to achieve for the new name a similar reputation in connection with the newer lines of work.

For reasons not necessary to enumerate, it has been found expedient to effect a subordinate organization, under the general laws of the State, bearing the old title of the Yale Lock Manufacturing Company, and also a similar organization entitled the Weston Crane Company. In like manner the Emery Scale Company was organized during last year. The stock of all these subordinate companies is owned and controlled by the parent company, now known as the Yale & Towne Manufacturing Company, and although the several subordinate organizations will be permanently maintained, for purposes relating to the ownership of patents and other franchises, the business of all will be conducted by the Yale & Towne Manufacturing Company, in its own name and for its own account, so that all communications should be addressed to the latter name.

THE EARTH-CLOSET.

One of the most living issues which has to be settled by the head of a household who plans to rent for the season, or build for summer occupancy alone, a house in the country or at the sea-shore, is what decent and convenient arrangements can be made for the reception and disposal of excreta. If a house is to be built the owner is unwilling, probably, to incur, for so short a season, the expense of establishing a proper system of water-carriage disposal and all that this implies, and if a house is to be rented he is as probably unwilling to subject his family to the annoyance and inconvenience of using the existing noxious and uncleanly privy — which in the country is apt to be anything rather than suggestive of privacy.

If our friend is a man of good sense, and if he has ever heard of the article, he will unquestionably undertake to put in some sort of an earth-closet, home-made or purchased,— probably the latter if he can discover any one who deals in them.

Once installed in some small room or closet in the shed or in the cellar he will find that it will serve his purpose admirably, being inoffensive, easy to keep in order, and as the pail requires emptying only every two or three weeks, occasioning very little trouble.

These closets, in various styles, can be shipped to any part of the country by

A. G. MYERS,
94 Beekman Street, New York.

REMOVAL.

On May 1, we removed to our new offices and warerooms, 86 and 88 Liberty Street, and 145 Broadway, where we have increased facilities for meeting the demand for our smaller classes of pumps, as well as improved accommodation for our water-works business.

HENRY R. WORTHINGTON.

NOTES.

We have just received one of the most artistic calendars of the year from Messrs. T. Aspinwall & Son, dealers in tiles of all kinds, 75 and 77 West Twenty-third Street, New York. It reaches us rather late in the season, to be sure, but when one remembers the time needed for preparing and printing so elaborate a piece of work, the delay is easily pardoned.

Messrs. Shields & Brown, manufacturers and sole proprietors of Bradley's Insulated Air-Coverings, for boilers, steam, gas and water pipes, have removed to new and more commodious quarters at Nos. 78 and 80 Lake Street, Chicago, where they are prepared to receive and execute promptly all orders entrusted to them. By reason of the adoption of entirely new and improved machinery in their manufactory, the quality of their goods will be much enhanced, being finished up in better style than heretofore. With the improvements that this enterprising firm have instituted, Bradley's Insulated Air Coverings will undoubtedly prove to be what their manufacturers confidently claim, viz.: the best non-conducting, the most durable, the easiest applied, and the neatest coverings in the world.

The Perth Amboy Terra-Cotta Company informs the world of its resources as an establishment in which art is held in high esteem, through the medium of one of the most artistic catalogues we have seen of late. The catalogue shows a great variety of subjects for treatment in terra-cotta, and proves that this company has in stock a very large and varied collection of models ready for immediate use, and offers guaranty for its ability to do justice to any new designs that may be submitted to it for treatment.

BUILDING INTELLIGENCE.

Three-st'y and basement brick dwell., 24' x 46', for Jas. M. Varnum, Farragut Square; cost, $9,000; J. C. Hornblower, architect.

Three-st'y brick dwell., 22' x 30', for Geo. Watts, Second St., bet. D and E Sts., n w; cost, $6,000; J. Gurmuller, architect; John Shane, builder.

Two-st'y brick restaurant and dwell., 21' 4" x 54' 6", for M. Kaufman, Eighth St., bet. I and K Sts., s e; cost, $2,000.

Three three-st'y and basement brick dwells., 20' x 37', for John Sherman & Co., Fourteenth St., near R St., n w; cost, $19,000.

Four two-st'y and basement brick dwells., 20' x 40', for David Hall Rice, Seventeenth St., bet. L and M Sts., n w; cost, $14,500.

Three-st'y brick store and dwell., 20' 6" x 82', for John W. Nairn, Fourteenth St., near P St., n w; cost, $5,000; Jas. H. McGill, architect; W. C. Morrison, builder.

Eight two-st'y and basement brick dwells., 16' 8" x 30', for Thos. E. Waggaman, cor. Eighth and Q Sts., n w; cost, $15,000; T. W. Kerr, builder.

Three two-st'y brick dwells., 17' x 30', for J. L. Suman, Second St., bet. B and C Sts., n w; cost, $6,000; N. F. Halley, architect; Stephens and Frye, builders.

Two-st'y brick engine and boiler room, 44' 3" x 53' 9", for Washington Gas-light Company; cost, $5,000.

Three-st'y and basement brick dwell., 23' x 32', for Eugene Morgan, N St. bet. Nineteenth and Twentieth Sts., n w; cost, $5,500; Wm. Price, builder.

Two-st'y and basement brick dwell., 20' x 40', for Miss Mollie Tassett, cor. Virginia Ave. and Tenth St., s w; cost, $2,800; Wm. Price, builder.

Two-st'y brick dwell., 21' x 39', for J. H. Albers, Thirteenth St., bet. Q and R Sts., n w; cost, $3,000; C. A. Didden, architect; G. B. William, builder.

Two-st'y frame dwell., 20' x 40', for Annie Hardon, to be built in the country; cost, $3,000.

Two-st'y brick dwell., 22' x 28', for Wm. Heine, to be built in the country; cost, $2,500.

Three-st'y brick store and dwell., 20' 3" x 45', for Thos. Kinney, Twentieth St., bet. M and N Sts.; cost, $4,000; Gray & Page, architects.

Two-st'y stone and frame dwell., 40' x 40', for Ellis Spear, to be built in the country; cost, $5,000; J. W. Wagner, architect; Mr. Hill, builder.

Two-st'y brick dwell., for Adolphus Feldvoss, Pennsylvania Ave., bet. Sixth and Seventh Sts., s e; cost, $2,500.

Two-st'y brick dwell., for Chas. King, H St., bet. Second and Third Sts.; cost, $2,700.

Three two-st'y and basement brick dwells., for Mrs. John Widmayer, cor. First and F Sts., n w; cost, $9,500.

Two-st'y brick dwell., for Christian Rupert, Corcoran St., bet. Fourteenth and Fifteenth Sts., n w; cost, $4,700.

Three-st'y and basement brick dwell., for J. B. Bryan, cor. Connecticut Ave. and R St., n w; cost, $14,000; Chas. Edmonston, builder.

Two two-st'y and basement brick dwells., for N. T. Haller and D. L. Morrison, N St., bet. Twelfth and Thirteenth Sts., n w.

Three three-st'y and basement dwells., for C. C. Duncanson, et al, H St., bet. Ninth and Tenth Sts., n w; cost, $75,000; D. McCarthy, builder.

Two-st'y brick dwell., for Gen. D. G. Swain, Mt Pleasant; cost, $8,000; Bright, Humphrey & Co builders.

Three-st'y brick dwell., for J. A. Jones, Fourteenth St., bet. Rhode Island Ave. and N St., n w; cost, $5,400.

Two-st'y brick dwell., for G. J. Gokeler, Seventh St., bet. Q and R Sts., n w; cost, $4,500.

Three-st'y brick dwell., for H. C. Burch, G St., bet. Thirteenth and Fourteenth Sts., n w; cost, $3,000; Wm. Baldwin, builder.

Three three-st'y and basement brick dwells., for R. I. Fleming, Twentieth St., bet. Massachusetts Ave, and Q St., n w; cost, $18,000.

Three-st'y and basement brick dwell., for G. W. Uttermule, Fifth St., bet. M and N Sts., n w; cost, $4,000.

Three-st'y and basement brick dwell., for M. A. Dashiels, H St., bet. Ninth and Tenth Sts, n w; cost, $7,000; Frank Harvey, builder.

Three-st'y brick dwell., for S. S. Blackford, cor. Massachusetts and New Jersey Aves.; cost, $3,000.

Two two-st'y brick dwells., for P. Tyson, K St., bet. North Capitol and First Sts., n w; cost, $4,200.

Two-st'y brick car-house and stable, for the Washington and Georgetown Railroad Company, W St., bet. Thirteenth and Fourteenth Sts., n w; cost, $12,000.

Five two-st'y brick dwells., for W. Z. Partello, cor. Sixth and P Sts., n w; cost, $15,000.

Six three-st'y and basement dwells., for John Sherman & Co., cor. Tenth and G Sts.; cost, $30,000; C. C. Martin, builder.

Six three-st'y brick dwells., for C. C. Martin, Corcoran St., bet. Thirteenth and Fourteenth Sts., n w; cost, $25,000.

Two-st'y store and dwell., for Henry Wex, Seventh St., bet. D and E Sts., s w; cost, $3,000.

Three two-st'y brick dwells., for C. W. King, New Jersey Ave., bet. K and L Sts., n w; cost, $5,400.

Three-st'y brick dwell., for C. Kennedy, New Jersey Ave., bet. B and C Sts., n w; cost, $5,500.

Four three-st'y and basement brick dwells., for John Hockmeyer, cor. Fifth and O Sts., n w; cost, $14,000.

Two two-st'y dwells., 14' 5" x 46', for A. Behrend, H St., bet. Fourth and Fifth Sts.; cost, $3,500; J. Gurmuller, architect.

General Notes.

Adams, Mass.—The Baptists will build a parsonage for Rev. Dr. Anable, two stories high, and 27' x 48'. William Chaddon has the contract.

Bethlehem, Pa.—Work has begun on the new laboratory for Lehigh University. A. Hutton, architect, Philadelphia.

Cleveland, O.—Mr. E. M. McGillin has contracted for the erection of a four-st'y brick building, to be used for store and office purposes. Cost, about $15,000.

The Cleveland Gaslight & Coke Co., is to build an immense gas-holder on Front St.

Crawfordsville, Ind.—Houses are building for T. H. B. McCain, cost $4,000, M. C. Klein, cost $4,800, and W. W. Mills, cost $3,000, from the designs of E. J. Hodgson, architect, Indianapolis.

East Hampton, Mass.—Rev. Father Walsh is succeeding well in obtaining subscriptions for the new Catholic church, and plans for the new building are nearly ready.

Green Castle, Ind.—Robert McKim of Madison, has given $10,000 to erect and equip an observatory at Green Castle University.

E. J. Hodgson of Indianapolis is the architect of the Central National Bank Building; cost $25,000.

Holyoke, Mass.—Gilbert Potvin is to build a brick tenement at Worcester Place.

Huntington, Ind.—Jail for Huntington County; cost $27,000. E. J. Hodgson, architect, Indianapolis.

Linoleumville, Staten Island, N. Y.—M. Maybaum has contracted for the erection of a large hotel, to cost about $15,000.

Maysville, Ky.—Mason County Jail; cost, $35,000. E. J. Hodgson, architect, Indianapolis.

Milwaukee, Wis.—Messrs. Burnham & Root, of Chicago, are the architects for the club-house to be built cor. Jefferson Ave., and Wisconsin St., for the Milwaukee Club.

Muncie, Ind.—House for J. W. Ryan; cost $6,000. E. J. Hodgson, architect, Indianapolis.

New Haven, Conn.—The directors of the General Hospital Society have decided to raise money for a $100,000 addition to the hospital.

Newton, Mass.—Work on the new Episcopal Chapel at Newton Highlands, will begin immediately.

Putney, Vt.—The Trustees of the Baptist Society have bought land and will soon build a church.

Redwood Falls, Minn.—Sealed proposals will be received by the Board of Education, May 10, 1883, for building a brick school-house in the village.

Springfield, Mass.—W. H. Hovey, Jr., is to build a house on the north side of Seventh St.

South Framingham, Mass.—The Roman Catholics are moving in the direction of building a church, which will cost from $16,000 to $20,000. The Methodists are also considering the feasibility of erecting a house of worship.

Warren, Mass.—Mrs. Quartus Otis is to build immediately.

Bids and Contracts.

Charleston, W. Va.—The contract for furnishing heating-apparatus for the court-house and post-office was awarded to Bartlett, Hayward & Co., of Baltimore, for $7,948.

Danville, Va.—The following is a synopsis of bids for encaustic tiling for the court-house and post-office: American Encaustic Tile Co., $528 (accepted); United States Encaustic Tile Co., $538; T. Aspinwall & Son, $583; Henry Dibblee, $750.

The following is a synopsis of bids for marble mantels for the court-house and post-office: Chas. E. Hall & Co., $456, Tennessee, black trimmings; Charles E. Hall & Co., $396, Lepanto or Knoxville (accepted); E. Fritsch, $471.60, Lepanto or Knoxville; E. Fritsch, $441.60, Hudson River Shell; A. Klaber, $437, Lepanto or Knoxville.

It has been found impossible to award the contract for the stone and iron work at Danville, Va., on account of lack of funds. The plans and specifications will be reduced and new bids called for.

Hagerstown, Md.—Joseph G. Miller has the contract for building the jail and sheriff's residence for Washington County; price, $25,500.

Jackson, Miss.—The contract for the stone-work for the basement and area walls of the new post-office and court-house has been awarded to the Belknap and Dumesnil Stone Company, of Louisville, for $10,280.

New York, N. Y.—The following are the bids for encaustic floor-tiling for the custom-house and post-office at Albany, N. Y.: E. Boote, New York, $5,520.60; American Encaustic Tile Co., New York, $4,400; United States Encaustic Tile Co., Indianapolis, $5,390; T. Aspinwall & Son, New York, $5,325.

Topeka, Kan.—The following are the bids for heating-apparatus for the court-house and post-office: Brooks & Kemper, Dayton, Ohio, $15,700; Bartlett, Hayward & Co., Baltimore, $15,448; Fred. Tudor, Boston, $16,667; Samuel S. Pope & Co., Chicago, $13,479.

Washington, D. C.—The following bids were received for sheet-lead for the new Pension Building. The bidders were as follows: Le Roy Sheet-Lead Manufacturing Company, New York, 6 cents per pound in New York; James Robertson & Co., Baltimore, 7 cents. The remaining bidders were all from Washington, as follows: J. Blake Kendall, 6¼ cents; James Ragan, 9½; Robert Leitch & Son, 6.73 cents; W. Rothwell, 7½; Thomas Somerville & Son, 6.7 cents; S. F. O'Brien, 8½; J. H. McGill, 6.69 cents. The contract was awarded to J. H. McGill.

COMPETITIONS.

AMERICAN ARCHITECT COMPETITION.

MECHANICS' HOUSES.

Prizes, $100, $75 and $50.

II. It is possible that two mechanics would perceive the possibility of securing a more commodious habitation by clubbing their purses, and building a double tenement under a common roof. In such a case each tenement might be treated as a distinct dwelling, or it would be fair to suppose that the two mechanics were brothers or intimate friends whose families could live in harmony, and could make use of certain rooms and conveniences in common, as for instance the kitchen, the dining-room, or a larger parlor in addition to the usual living-rooms of each house. Any competitor who attempts to work out this phase of the problem must take care to keep the privacy of the two dwellings in all other respects well marked. Building thus under one roof, and on a common foundation, each mechanic might expect to obtain a larger dwelling, having at least seven rooms, without materially increasing their combined expenditure, which the competitors must try and keep within $3,000.

As it may be fair to suppose that this mechanic and his family are more hardy than more fortunate individuals who enjoy a larger income, he might elect to build, for perpetual occupancy, such a house as the more wealthy would build only for summer use.

Required. A pen-and-ink drawing 22″ x 30″ containing a perspective view; plans of both floors, and an elevation of one side not shown in the view; framing plans at a small scale and all necessary details.

Also, a short skeleton specification, a detailed bill of quantities and prices, and a tender from some reputable builder, name and address being furnished for publication.

For the best designs in the order of their excellence will be awarded prizes of $100, $75 and $50 respectively.

Drawings must be received at the office of the *American Architect* on or before **Saturday May 19, next.**

SCHOOL-HOUSE.

[At Thorntown, Ind.]

THORNTOWN, IND., April 19, 1883.

The plans and specifications of a two-st'y brick school-house, 69′ 4″ x 73′, will be opened for inspection after April 19, at the office of Dr. Curryer, Thorntown, Ind.; also at the office of J. W. Hammond, the architect, Frankfort, Ind.

Bids for constructing the same in a thorough and substantial manner will be received by the undersigned School Board **up to 12 M., Thursday, May 10, 1883.**

Bids may be made for building the house as a whole, or in parts, to wit: for the basement or foundation story, with necessary excavations; for the mason-work; for the carpenter-work, including the carpenter's material; for the plastering, slating and painting.

The successful contractors will be required to give sufficient bonds to insure a faithful compliance with their contract.

The Board reserves the right to reject any or all bids, as they may deem best for the interest of the school-town of Thorntown, Ind.

W. F. CURRYER,
THOS. SKILLINGS, } Board of Trustees.
CHARLES WELCH,
384

SOLDIERS' MONUMENT.

[At New Haven, Conn.]

Designs are invited and proposals will be received by the undersigned, **until August 1, 1883,** for the erection of a Soldiers' Monument in New Haven, Connecticut, the entire cost of which is not to exceed fifty thousand dollars.

The committee reserve the right to reject any or all designs and proposals offered.

Three hundred dollars will be paid for the design which shall be accepted and approved by the committee if any one of the designs presented shall be so accepted and approved.

S. E. MERWIN, JR.
385 Chairman Soldiers' Monument Committee.

COMPETITION.

SCHOOL-HOUSE.

[At Milan, O.]

MILAN, April 17, 1883.

The Board of Education of Milan Union Schools, of Milan, O., will receive for inspection, plans and specifications for a public school building, to be built of brick, two stories high, with six rooms, capable of seating three hundred scholars.

Plans and specifications will be received by the Board **until 12 o'clock, M., on the 10th day of May, 1883.**

No plan will be paid for except that accepted by the Board.

E. L. PERRY,
384 Clerk.

PROPOSALS.

MASONRY.

[Near Columbia, O.]

AUDITOR'S OFFICE, HAMILTON COUNTY, O.,
CINCINNATI, April 16, 1883.

Sealed proposals will be received at the office of the Commissioners of Hamilton County, Ohio, **until Saturday, May 12, 1883, at 12 o'clock, M.,** for building the masonry and making the excavation and fill for a bridge over Duck Creek, on the road from Norwood to Oakley, near S. Harris's, Columbia Township.

The work to be done in accordance with the specifications on file in the said Commissioners' Office.

The right to reject any or all bids is reserved.

W. S. CAPPELLER,
384 County Auditor.

COURT-HOUSE.

[At Houston, Tex.]

Bids will be received for a $100,000 court-house (estimated) for Harris County, in the City of Houston, Tex. Bids for the whole work will be received by the County Clerk **up to 12 M., sharp, on the 14th of May next.**

Copies of plans and specifications can be had on application to the County Clerk or to Mr. E. J. Duhamel, architect.

Envelopes containing bids must be addressed to the Clerk of Harris County, and indorsed on sealed side, "Bid for Harris County Court-House."

The Court reserves the right to reject any or all bids.

C. THROCKMORTON, County Commissioner.
E. P. HAMBLEN, County Judge.
FRANK S. BURKE, County Commissioner.
384 Committee.

STEAM-HEATING APPARATUS.

[At Charlotte, Mich.]

May 24, 1883.

Notice is hereby given that sealed proposals will be received at the office of the Probate Judge, Charlotte, Michigan, **up to 10 o'clock, A. M., on the 25th day of May, 1883,** for the furnishing of steam-heating apparatus required in the heating and ventilating of Eaton County Court-House.

Plans may be seen at the office of the Probate Judge of said County, or at the office of D. W. Gibbs & Co., Toledo, O.

The right is reserved to reject any or all bids.

By order of the Building Committee.

385 ASA K. WARREN, Chairman.

LOCK.

[On the Great Kanawha, W. Va.]

U. S. ENGINEER OFFICE, 70 SARATOGA ST.,
BALTIMORE, MD., April 23, 1883.

Proposals for building part of Lock No. 2 of the Great Kanawha River Improvement, W. Va., will be received **until noon of May 15, 1883,** and opened immediately thereafter.

Blank forms and specifications can be had on application to this office.

WM. P. CRAIGHILL,
385 Lt.-Col. of Engineers, U. S. A.

SCHOOL-HOUSE.

[At New York, N. Y.]

Sealed proposals will be received by the School Trustees of the Tenth Ward at the hall of the Board of Education, **until May 7, 1883,** for alterations, etc., at Grammar School-House No. 20.

For full information see *City Record*, for sale at No. 2 City-Hall. 384

PROPOSALS.

INSANE ASYLUM.

[At Rochester, Minn.]

ST. PETER, MINN., April 7, 1883.

Sealed proposals will be received by the undersigned, Secretary of the Board of Trustees of the Minnesota Hospitals for Insane, **until 12 M., May 15, 1883,** for building a west wing to the Second Hospital at Rochester, Minn.; also for building a detached building to the First Hospital at St. Peter, Minn., according to plans and specifications which may be seen at the office of H. E. Horton, architect, at Rochester, Minn., and at the Hospital at St. Peter after May 10, 1883.

Each bid must give the name or names and post-office address of all parties interested in or parties to it. Each bid must be accompanied by a certified check on some national or State bank of the State of Minnesota for the sum of $1,000, for the Rochester building and $500 for the St. Peter building, payable to the order of Wm. Schimmell, treasurer, to be forfeited to the State of Minnesota by any bidder who, his bid being accepted, fails to enter at once into contract for the work; otherwise to be returned to the bidder.

The accepted bidder must give the customary bond, with good and sufficient sureties, to be approved by the Board of Trustees, conditional on the faithful performance of the contract, in the sum of one-third of the amount of contract.

Bids for each building should be separate and marked "Proposals for building at First Hospital," and "Proposals for building at Second Hospital."

The wing at Rochester to be completed on or before November 1, 1884, and no payments to be made until 1884.

The building at St. Peter to be completed on or before January 1, 1884.

The trustees reserve the right to reject any or all bids not satisfactory.

A. L. SACKETT,
384 Secretary of Board of Trustees.

LABOR AND MATERIAL.

[At Toledo, O.]

OFFICE OF SUPERVISING ARCHITECT,
TREASURY DEPARTMENT,
WASHINGTON, D. C., April 25, 1883.

Sealed proposals will be received at this office **until 12 M., on the 16th day of May, 1883,** for all the labor and materials, bricks and mortar, and setting stone required to complete the custom-house, etc., at Toledo, Ohio, in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the Superintendent.

JAS. G. HILL,
385 Supervising Architect.

COURT-HOUSE.

[At Seguin, Tex.]

Sealed proposals will be received **on or before Wednesday, 16th May, 1883, 2 o'clock,** P. M., by the Commissioners' Court of Guadalupe County, Seguin, Tex., for the erection of a court-house for said County.

The Commissioners' Court reserves the right to reject any or all bids.

Plans and specifications to be seen at the office of the architect, Alfred Giles, No. 12 Soledad Street, San Antonio, Tex., or at the County Clerk's office, Seguin.

By order of Commissioner's Court, Guadalupe County. Witness: C. L. Arbuckle, County Court of Guadalupe County, and the seal of said Commissioner's Court, affixed at office in Seguin this the 17th day of April, A. D., 1883.

C. L. ARBUCKLE,
385 County Clerk, Guadalupe County.

COURT-HOUSE.

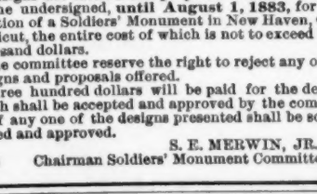
[At Valparaiso, Ind.]

The Board of Commissioners of Porter County, Ind., will receive proposals **until 2 P. M., May 24, 1883,** for the erection of a court-house in the city of Valparaiso.

Plans and specifications can be seen at the Auditor's office in Valparaiso, and at the office of J. C. Cochrane, architect, No. 78 Ashland Block, corner Clark and Randolph Sts., Chicago.

Contractors can obtain printed instructions as to requirements and form of proposals upon application to the Auditor or architect.

[Signed] L. P. SCOTT,
N. PICKRELL,
F. BURSTROM, } Board of Commissioners.
[Attest] W. E. BROWN,
386 Auditor Porter County.



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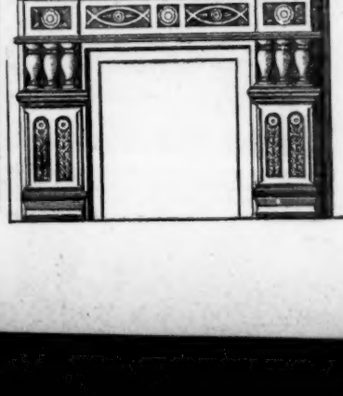

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All in the latest prevailing styles, from the drawings of a number of prominent architects, thus securing a great variety of plans and diversity of treatment, and offering the largest opportunity for selection.

ONE LARGE QUARTO VOLUME. PRICE, POST PAID, $5.

Frontispiece.—Club House of the Greenwood Lake Association.

Plates 1 and 2.—Perspective Elevations and Plans of a low-priced cottage.

Plate 3.—Elevations and Plans of two cottages costing from $500 to $1,000, and $800 to $,1000 respectively.

Plate 4.—Elevations and Plans of three small cottages costing $1,200, $1,100 and $2,000 respectively.

Plate 5.—Elevations and Plans of two small cottages costing $1,200 and $1,300 respectively.

Plate 6.—Elevations and Plans of two small cottages costing from $500 to $800, and $1,000 to $1,500 respectively.

Plate 7.—Perspective, Elevations and Plans of cottages costing about $3,000.

Plate 8.—Perspective and Plans of two cottages costing $1,000 and $2,500 respectively.

Plate 9.—Elevations, Plans and Details of $1,500 house.

Plate 10.—Perspective, Elevations and Plans of a small cottage costing from $1,500 to 1,800.

Plate 11.—Perspective, Elevations and Plans of 15 room cottage.

Plate 12.—Elevations and Plans of small cottage.

Plate 13.—Perspective, Elevation, Plans and Details of house costing from $2,400 to $3,600.

Plates 14 and 15.—Elevations, Plans and Details of house costing from $3,000 to $4,000.

Plate 16.—Perspective and Plans of cottage costing $3,500.

Plate 17.—Perspective, Elevations, Plans and Details of house costing from $2,900 to $3,200.

Plate 18.—Perspectives and Plans of house costing about $5,000.

Plate 19.—Perspectives and Plans of suburban cottage costing about $4,000.

Plate 20.—Perspectives and Plans of two mountain houses costing $2,800 and $5,200 respectively.

Plates 21 and 22.—View of block of city houses for the Hon. John Kelley, N. Y.

Plates 23 to 26.—Perspective, Elevations, Plans and Details of a large country house with ample verandas.

Plate 27.—Elevations and Plans of stone rectory costing about $9,000.

Plate 28.—Perspective and Plans of a Bermuda house.

Plates 29 and 30.—Perspective, Elevations, and Plans of seaside cottage.

Plate 31.—Elevation and Plans of frame house costing about $3,000.

Plate 32.—Perspective, Elevations and Plans of medium price cottage.

Plate 33 and 34.—Elevations and Plans of a $5,000 to $6,000 house.

Plates 35 and 36.—Elevations and Plans of a row of brick dwellings, English style, American plans.

Plate 37.—Perspective and Plans, two low-priced cottages.

Plate 38.—Perspective and Plans, two seaside cottages.

Plate 39.—Plans of Club House shown in Frontispiece.

Plate 40.—Elevations and Plans of Greenwood Lake Pavilion.

Plate 41.—Sketch for a school-house.

Plates 42 and 43.—Perspective, Plans and Details of seaside Baptist chapel.

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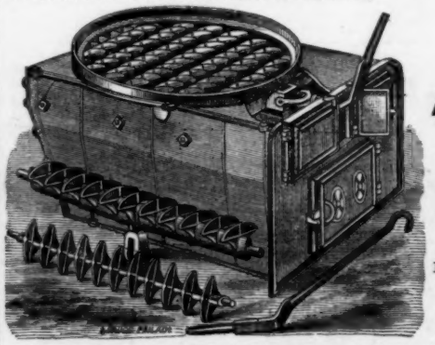

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